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DAMES & MOORE

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**CONSTRUCTION COMPLETION
REPORT**

Prepared for:
**ORMET PRIMARY ALUMINUM
CORPORATION
HANNIBAL, OHIO**

**JOB NO: 07983-039-120
AUGUST, 1998**

644 Linn Street, Suite 501
Cincinnati, Ohio 45203
Voice (513) 651-3440
Fax (513) 651-3452

August 10, 1998

Mr. Anthony J. Rutter
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

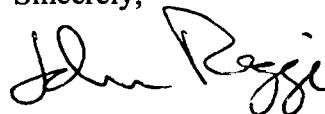
Dear Mr. Rutter:

Re: **CONSTRUCTION COMPLETION REPORT/
OPERATION AND MAINTENANCE PLAN
ORMET PRIMARY ALUMINUM SUPERFUND SITE
HANNIBAL, OHIO**

Enclosed please find two (2) copies of the *Construction Completion Report* and *Operation and Maintenance Plan* prepared for the Ormet Primary Superfund Site in Hannibal, Ohio. These documents have been submitted to fulfill the requirements of Section VI.12. of the Consent Decree.

If you have any questions or comments regarding the submittal, please call.

Sincerely,



John D. Reggi, Director
Corporate Environmental Services

JDR:cr

Enclosures

Cc: D. Hughes USACOE w/e
Kay Gossett OEPA w/e
T. Temple wo/e
R. Wiedman wo/e
G. Armstrong D&M wo/e

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ORMET CERTIFICATION

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: John Reggi

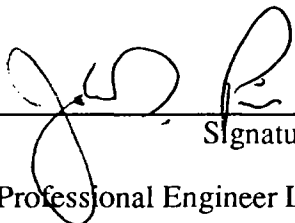
Title: Director Corporate Environmental Services

John Reggi
Signature

8/7/98
Date

ENGINEER CERTIFICATION

I, John D. Priebe, a Professional Engineer in the State of Ohio, hereby certify that the Remedial Construction Activities performed at the Ormet Primary Superfund Site have, to the best of my knowledge and belief, been completed in accordance with the *Final Design Report* dated February, 1997, *Technical Specifications and Drawings* dated February, 1997, *Construction Field Sampling Plan* dated February, 1997, and *Construction Quality Assurance Project Plan* dated April, 1997, except as described in the accompanying report. This conclusion is based on observations made by Dames & Moore employees under my direct supervision and information provided by Ormet Primary and their respective contractors. Remedial Construction activities were substantially completed on June 12, 1998.

by  _____
Signature

8/10/98

Date

Ohio Professional Engineer License No. 56977

John D. Priebe, P.E.
Dames & Moore
644 Linn Street, Suite 501
Cincinnati, Ohio 45203

(513) 651-3440

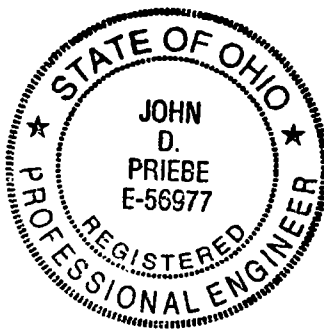


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REMEDIAL CONSTRUCTION COMPLETION REPORT

ORMET PRIMARY SUPERFUND SITE HANNIBAL, OHIO

1.0 INTRODUCTION

This Remedial Construction Completion Report presents information to support the certification of remedial construction activities associated with the Ormet Primary Aluminum Corporation (Ormet Primary) Superfund Site in Hannibal, Ohio. The contents of this report and the attached certification are based on observations made by Dames & Moore engineers and field technicians, material information submitted by suppliers, and the results of field and laboratory testing performed on various materials during construction.

2.0 SITE OVERVIEW AND BACKGROUND

The Ormet Primary Superfund Site (Figure 1) is located adjacent to the Ormet Primary aluminum reduction facility (reduction facility) in Monroe County, Ohio, approximately 2.5 miles north of Hannibal. The site is situated on the west bank of the Ohio River, and occupies an area of approximately 47 acres east of the reduction facility.

A brief summary of information regarding the specific areas of interest is presented below. The location of the areas of interest are depicted on Figure 2. For additional information regarding the site, the reader should refer to the agency approved *Remedial Investigation (RI) Report* (Geraghty & Miller, December 1993) and *Final Design Report* (Dames & Moore, February 1997).

2.1 FORMER SPENT POTLINER STORAGE AREA

The Former Spent Potliner Storage Area (FSPSA) is located in the northeast portion of the Ormet Primary site, between the site access road and former Disposal Pond 5. The topography of the FSPSA is predominantly gently sloping toward the south. During the period of 1958 to 1981, spent potliner was stored in two separate piles located north and south of the unpaved access road. Approximately 85,000 tons of potliner were placed in the area for storage between 1958 and 1968. During 1968 to 1981, Ormet Primary used an on-site cryolite-recovery plant to process spent potliner that was being generated by manufacturing operations. During 1968 to 1981, Ormet Primary used construction equipment to load spent potliner from the FSPSA into trucks for transport to the cryolite-recovery plant. While spent potliner in the FSPSA was removed, a small

portion of the spent potliner material was broken and crushed during handling by construction equipment and has been mixed into the underlying soil. Shallow soil within the FSPSA is the predominant source of groundwater alterations to the alluvial aquifer.

2.2 CARBON RUNOFF AND DEPOSITION AREA

The Carbon Runoff and Deposition Area (CRDA) is a formerly wooded area of the plant bordered on the west by the toe of the slope below the plant fence line between wells MW-3 and MW-40, on the east by the toe of the Construction Materials Scrap Dump (CMSD), on the north by the fence line south of Ponds 1 and 2, and the south by the Ohio River. The deposits of carbon material in this area ranged from less than 1-foot to approximately 5 feet thick and appear to have been carried into this area by stormwater runoff from the area around the anode crushing mill.

2.3 BACKWATER AREA

The Backwater Area is located at the mouth of the Outfall 004 stream and is bordered to the west by the CRDA, the east by the CMSD, and south by the Ohio River. The Backwater Area received stormwater runoff from areas of the plant, the CRDA, the CMSD, and wastewater discharges from Outfall 004. These processes resulted in the accumulation of sediment within the area that exhibit detectable levels of PCBs and polynuclear aromatic hydrocarbons (PAHs).

2.4 CONSTRUCTION MATERIALS SCRAP DUMP (CMSD)

The CMSD covers an area of approximately 4 to 5 acres on the southeastern portion of the Ormet Primary property. The CMSD occupies an area that was formerly a terrace above the Ohio River floodplain. The CMSD operated from approximately 1959 to 1979. During that time, the unit received a variety of material and debris from plant operations. As discussed in the Remedial Investigation report, materials that were potentially (but not necessarily) disposed include furnace brick, wooden pallets, petroleum coke fines and anode production scrap, miscellaneous demolition debris, petroleum products, plant trash, discarded electrical components, motor shop wastes, discarded mechanical components, discarded raw materials, and spent potliner. The materials were typically transported by truck, then dumped and spread over the ground surface.

In 1995, Ormet Primary negotiated a Consent Decree for implementation of the Remedial Design and Remedial Action activities at the site. The Final Design for the selected Remedial Action was

approved by U.S. EPA on April 15, 1997. The approved remedial design consists of the following documents:

- *Final Design Report* dated February, 1997,
- *Technical Specifications* dated February, 1997,
- *Construction Field Sampling Plan* dated February, 1997, and
- *Construction Quality Assurance Project Plan* dated April, 1997.

These documents detailed the technical requirements for implementation of the remedial construction activities.

3.0 OVERVIEW OF CONSTRUCTION ACTIVITIES

As discussed in the approved design documents, the construction activities were separated into two discrete phases in order to provide a mechanism for agency review of specific remedial construction materials and protocols prior to their implementation. The Phase I construction activities were performed in March through April, 1997. In summary, Phase I (pre-construction activities) consisted of:

- Preparation of the Health & Safety/Contingency Plan,
- Preparation of the Backwater Area Isolation Structure submittal, and
- Finalization of the Construction Quality Assurance Project Plan.

Following review and/or approval of the Phase I pre-construction documents, Phase II construction activities were implemented. Phase II construction activities were conducted from May 1997 to June 1998. In summary, Phase II construction activities consisted of:

- Site Preparation,
- Removal of contaminated material from portions of the CRDA,
- Recontouring the CMSD,
- Installation of the CMSD Collection and Treatment System,
- Construction of the TSCA Cell,
- Relocation of Outfall 004 discharge,
- Removal of contaminated sediment from Backwater Area,

- Installation of the FSPSA Soil Flushing System,
- Construction of the site fencing, and
- Site restoration.

The Phase I and Phase II activities were performed in substantial accordance with the approved Final Design, except as noted herein. Additional information regarding implementation of the remedial construction activities is presented in the following sections.

The Ormet Primary retained O'Brien & Gere Technical Services, Inc. (O'Brien & Gere) of Syracuse, New York as the remedial contractor for the project. Several subcontractors were retained by O'Brien & Gere to implement specialized construction tasks and to perform the required independent quality control testing and surveying activities. O'Brien & Gere retained Geo-Synthetics, Inc. (GSI) of Waukesha, Wisconsin to install the TSCA Cell and CMSD geosynthetic materials (geosynthetic clay liner, high-density polyethylene liner, and synthetic drainage material). O'Brien & Gere also retained Professional Service Industries, Inc. (PSI) of Parkersburg, West Virginia to provide construction quality control for the earthwork on the project. Vernon Surveying Company (Vernon) of Marietta, Ohio was retained to provide the required surveying services.

Ormet Primary retained Dames & Moore to fulfill the role of the Quality Assurance Firm described in the technical specifications and Construction Quality Assurance Project Plan. Dames & Moore retained Precision Environmental Laboratories (PEL) of Orange, California to perform the required destructive testing on the liner samples.

In addition to the organizations listed above, Ormet Primary also retained Hydrosystems Management, Inc. to perform the monitoring well abandonment activities and Kemron Environmental Services, Inc. (Kemron) to perform the required verification sample analytical activities.

4.0 PHASE I - PRE-CONSTRUCTION ACTIVITIES

The Phase I - Pre-Construction Activities were initiated in March 1997 and were substantially completed by June 1997. The Phase I - Pre-Construction Activities consisted of preparation of the *Construction Health and Safety/Contingency Plan*, preparation of the *Backwater Area Isolation*

Structure Plan, and finalization of the *Construction Quality Assurance Project Plan*. These documents were submitted to the U.S. EPA during the Pre-Construction Conference on April 29, 1997.

As part of the Pre-Construction Activities, an investigation of potential borrow materials was also implemented. This investigation was performed to identify materials that achieved the project specifications for the various earthen and aggregate materials to be used on the project. These materials consisted of silty clay fill material, fine-grained subgrade material, drainage material, and vegetative soil material.

O'Brien & Gere proposed to obtain the silty clay fill material, fine-grained subgrade material, and vegetative soil material from a on-site borrow area. The borrow area was located to north of State Route 7, immediately across from the Ormet Primary Reduction Facility. Soil samples were obtained from test pits installed in the proposed borrow area. The results of this investigation indicated that the borrow materials achieved the specification requirements for Silty clay fill material ($k \leq 1 \times 10^{-5}$ cm/sec), fine-grained subgrade material, and vegetative fill. Further information and geotechnical testing results of the proposed materials is provided in Appendix A.

In addition to the initial investigation testing, the technical specifications and *Construction Field Sampling Plan* required that supplemental moisture density relationship testing (ASTM D-698), Liquid and Plastic Limit testing (ASTM D-4318), and material finer than the No. 200 sieve testing (ASTM D-1140) be performed for every 5,000 cubic yards of silty clay fill material and fine-grained subgrade material placed. These supplemental testing results have also been provided in Appendix A.

O'Brien & Gere proposed to utilize Grimes Borrow Pit in Grandview, Ohio as the source of drainage material for the TSCA Cell leakage detection/groundwater monitoring layer and leachate collection system. Particle size and hydraulic conductivity testing performed on the proposed indicated that the proposed material achieved the requirements of the specifications. Testing results for the drainage material are provided in Appendix A.

5.0 PHASE II - CONSTRUCTION ACTIVITIES

The Phase II construction activities were initiated in April 1997 and were substantially completed in June, 1998. The Phase II construction activities consisted of:

- Site Preparation,
- Removal of contaminated material from portions of the CRDA,
- Recontouring the CMSD,
- Installation of the CMSD Collection and Treatment System,
- Construction of the TSCA Cell,
- Relocation of Outfall 004 discharge,
- Removal of contaminated sediment from Backwater Area,
- Installation of the CMSD and TSCA Cell cap,
- Installation of the FSPSA Soil Flushing System,
- Construction of the site fencing, and
- Site restoration.

These activities are described in the following sections.

5.1 SITE PREPARATION

The primary site preparation activities included erection of erosion controls, installation of the temporary treatment system, construction of the decontamination area, and abandonment of specified wells.

Prior to construction activities, silt fences were erected by O'Brien & Gere along the CMSD/Ohio River interface, the western perimeter of the CMSD, and along the southern perimeter of the CRDA. Silt fences were also placed along each bank of Outfall 004 temporary diversion channel alignment. These controls were maintained for the duration of the associated earthwork and excavation activities.

The technical specifications required that the contractor install and maintain a temporary treatment system during construction. The temporary treatment system was used to treat construction-derived wastewaters. These waters included liquids generated from Backwater Area dewatering activities, stormwater collecting in potentially contaminated excavation areas, and decontamination rinsate, etc. Prior to construction activities, O'Brien & Gere installed a temporary treatment system consisting of a 25,000 gallon storage tank, two 10 microgram bag filters (installed in

parallel), and two 10,000 pound carbon vessels (operated in series). The system was capable of treating a flow rate of 100 gallons per minute. During the course of construction, construction-derived wastewaters were collected and treated in the system. The treated water was discharged to Outfall 004 under a modification to Ormet Primary's existing National Pollutant Discharge Elimination System (NPDES) permit.

In order to provide an area for equipment decontamination, a decontamination area was constructed immediately north of the CRDA limits. The decontamination area was constructed by constructing a berm of soil around the proposed decontamination pad area. A decontamination pad liner was then constructed which consisted of a 40-mil, high-density polyethylene liner. The decontamination area was utilized throughout construction until there was no longer the potential for equipment contact with potentially contaminated materials. Rinsate generated from operation of the decontamination area was pumped through the temporary treatment system. Following completion of equipment decontamination, the decontamination area residuals (i.e., liner, etc.) were placed beneath the CMSD subgrade.

As discussed in the approved design documents, several wells in the vicinity of the construction activities required abandonment. For wells designated for abandonment (MW-33D, MW-33S, MW-43S, and MW-43D), the well casings were overdrilled with hollow stem augers, and the bore hole grouted with bentonite grout from bottom to top with a tremie pipe as the augers were removed. Soil cuttings and monitoring well remnants were transferred to the CMSD and incorporated beneath the subgrade material. Documentation associated with the monitoring well abandonment activities is presented in Appendix B.

5.2 REMOVAL OF CONTAMINATED MATERIAL FROM CRDA

The Record of Decision required that material within the CRDA be excavated down to native soil, and, if appropriate (i.e., they exhibit a PCB concentration of 50 mg/kg or less), be consolidated within the CMSD prior to installation of the CMSD cap. For materials exhibiting a PCB concentration exceeding 50 mg/kg, the approved design documents permitted disposal of such materials within the constructed on-site TSCA disposal cell (discussed in Section 5.5). These actions would remove the potential for further migration of the carbon, and any associated hazardous substances, into the Backwater Area and/or Ohio River.

In order to sequence construction to permit construction of the CMSD, TSCA disposal cell, and relocation of the Outfall 004 discharge stream, the CRDA removal activities were implemented in three stages. Each stage of CRDA removal activities consisted of the following general activities:

- Installation of a temporary erosion and sediment controls,
- Excavation of carbon materials, below-ground vegetation, and underlying soil (as necessary), and placement of these materials within the limits of the CMSD. Suspected PCB-containing materials removed from the CRDA were placed within the TSCA disposal cell, or temporarily stockpiled within the CRDA or CMSD,
- Demonstration that CRDA Soil Cleanup Standards have been achieved through implementation of a verification sampling program,
- Spreading and compaction of stockpiled materials exhibiting PCB concentrations <50 ppm within the limits of the CMSD,
- Spreading and compaction of materials suspected of exhibiting PCB concentrations \geq 50 ppm in the on-site TSCA disposal cell,
- Regrading the CRDA to drain into the relocated Outfall 004 discharge channel, as appropriate, and
- Revegetating areas disturbed by construction.

The Cleanup Standards for the CRDA are summarized on Table 1. These standards are applicable to all CRDA areas, with the exception of the Stage I CRDA area. The Stage I CRDA area was within the limits of the future CMSD cover system.

As previously discussed, the CRDA removal activities were performed in three stages in order to permit construction of the on-site TSCA disposal cell within the CMSD and efficient relocation of the Outfall 004 system. The approximate limits of the Stage I, Stage II, and Stage III removal areas are depicted on Figure 3. Discussion of each stage of CRDA removal is provided in the following sections.

5.2.1 Stage I CRDA Removal

The first stage of CRDA removal activities involved the removal of carbon materials (and underlying soils exceeding applicable cleanup standards) within the proposed CMSD regrading limits, and along the proposed Outfall 004 temporary drainage channel alignment. These activities were performed between May and June, 1997. The initial carbon/soil removal activities consisted of the excavation of all visible carbon within the proposed removal area. The excavated materials were temporarily staged in piles located within the limits of the CRDA (for future disposal in the

constructed on-site TSCA Cell). The staged piles were protected with plastic sheeting and soil berms to prevent contact with precipitation and stormwater run-on.

Following removal of the visible carbon deposits within Stage I, a verification sampling program was implemented in accordance with the provisions of the *Construction Quality Assurance Project Plan*. The sampling program was performed to verify that the clean-standards for the site have been achieved. This program involved dividing each excavation area into a series of approximately 2,500 square foot (50 foot by 50 foot) grid areas. Shallow composite samples were then collected following the completion of each excavation iteration. The verification sampling program is further discussed in Appendix C.

Because the Stage I CRDA area was located within the footprint of the future CMSD cover system, the collected verification samples were required to exhibit PCB concentrations of less than 50 mg/kg. If the initial verification sampling results from any grid area indicated PCB concentrations exceeding 50 mg/kg, additional material was excavated from the corresponding area and additional verification samples were collected until all Stage I CRDA areas exhibited PCB concentrations less than 50 mg/kg. A summary of the Stage I CRDA verification sampling grid areas and results is provided on Figure 4. The Stage I CRDA verification sampling results are also summarized on Table 2.

As part of the Stage I CRDA excavation activities, carbon and underlying soils along the alignment of the temporary Outfall 004 drainage channel were also excavated and stockpiled. Following receipt of verification sample results (SS-1 and SS-2), a temporary drainage channel was constructed. Following diversion of the Outfall 004 effluent flow, the remaining portions of the former Outfall 004 drainage channel were backfilled with compacted silty clay fill from the on-site borrow area. The silty clay fill was placed in loose lifts up to 8-inch thick and was compacted to at least 95 percent of the material's Standard Proctor maximum dry density. A temporary stormwater diversion berm was also constructed adjacent to the proposed western CMSD regrading limit to minimize the potential for inundation of the CMSD regrading area by stormwater from Outfall 004. Due to moist subgrade conditions encountered in the vicinity of the temporary stormwater diversion berm, the initial soil lifts could not be placed in thicknesses of 8-inches or less as required by the technical specifications. Instead, the initial lifts were placed in thicknesses exceeding 8-inches in order to bridge over the soft materials and provide a suitable surface for subsequent compaction activities. The upper lifts of the temporary stormwater diversion berm were placed in 8-inch thick loose lifts and compacted to at least 95 percent of the material's Standard Proctor maximum dry density. Compaction testing reports are provided in Appendix A.

Completion of the CRDA Stage I removal activities enabled implementation of the CMSD regrading activities (discussed in Section 5.3).

5.2.2 Stage II CRDA Removal

Following completion of the Stage I CRDA removal activities, the Stage II CRDA removal activities were implemented. The Stage II CRDA removal activities were implemented in June and July, 1997.

The initial Stage II CRDA removal activities consisted of the excavation of all visible carbon, west of the Stage II removal boundary identified on Figure 3. During the initial excavation activities, the excavated materials were temporarily stockpiled (within unexcavated areas of the CRDA) for eventual disposal within the on-site TSCA Cell. Following removal of the visible carbon deposits, representative samples of the underlying soil were obtained to assess whether they exhibited PCB or PAH concentrations above the CRDA Soil Cleanup Standards presented in Table 1. Grid areas with associated samples exceeding the cleanup standards were subjected to further excavation. However, because initial verification sampling results indicated PCB concentrations less than 50 mg/kg for all collected samples, the additional excavated material from associated grid areas was transferred directly to within the limits of the regraded CMSD (rather than stockpiling for future TSCA Cell disposal). A summary of the Stage II CRDA verification sampling grid areas and results is provided on Figures 5 and 6. The Stage II CRDA verification sampling results are also summarized on Table 3. All Stage II CRDA verification samples exhibited PCB concentrations less than 1 mg/kg and carcinogenic PAH concentrations less than 60 mg/kg.

Completion of the Stage II CRDA removal activities enabled construction to begin on the permanent Outfall 004 discharge channel (discussed in Section 5.6).

5.2.3 Stage III CRDA Removal

Following completion of the Outfall 004 relocation (discussed in Section 5.6), contaminated material was removed from the remainder of the CRDA. The Stage III removal activities were performed in September and October, 1997. The removal activities were implemented in accordance with the same methodologies and standards utilized for the previous Stage II CRDA removal activities. However, because the on-site TSCA Cell construction activities were complete

at the time of Stage III CRDA removal, the removed materials were transferred directly to the TSCA Cell.

A summary of the Stage III CRDA verification sampling grid area locations and results is provided on Figure 7. The Stage III CRDA verification sampling results are also summarized on Table 4. As shown on Figure 7, all samples collected from the Stage III CRDA area exhibited carcinogenic PAH concentrations less than the 60 mg/kg cleanup standard. All Stage III CRDA verification samples (except SS-75 and SS-78) exhibited PCB concentrations less than 1 mg/kg. Samples from grid areas SS-75 and SS-78 exhibited PCB concentrations of 5.3 mg/kg and 1.3 mg/kg, respectively. The approved design documents allow areas determined to have a PCB concentration between 1 and 10 mg/kg to be addressed through an alternate remedial action. This alternate remedial action involved the placement of a minimum 10-inch thick vegetative cover layer over the area, and seeding/mulching the surface to minimize the potential for future erosion and exposure. In accordance with this provision, a soil cover was placed over the entire area associated with grid areas SS-75 and SS-78. Survey information demonstrating the soil cover over these areas has a minimum thickness of 10-inches is provided on Table 5.

5.3 RECONTOURING THE CMSD

The Record of Decision required Ormet Primary to recontour and cap the CMSD with a cap that met the substantive requirements of RCRA Subtitle C landfill closure. Prior to construction of the cover system, the CMSD area was regraded to eliminate the steep slope adjacent to the Ohio River.

The CMSD was regraded to remove waste material located within approximately 15 feet of the current edge of the Ohio River, and to regrade the surface to a maximum slope of 25 percent (4 horizontal to 1 vertical). The regraded material was placed in the small valley in the western portion of the CMSD. The westernmost limit of the CMSD was established by the location of the CMSD seep collection system as shown on the design drawings (and described in Section 5.4). Material removed from other portions of the site (i.e., material from Stage II CRDA removal activities, New Cast House Area soil stockpiles, FSPSA debris and stained soil, etc.) deemed suitable for consolidation or use as subgrade material was also placed in this area. In addition, an approximately 180-foot by 150-foot area near the CMSD crest was shaped to form the proposed on-site TSCA Cell. The CMSD regrading activities involved the regrading of approximately 53,000 cubic yards of waste material. Regraded CMSD wastes were placed in approximately 2- to 3-foot thick individual lifts and compacted by a vibrating smooth drum roller or sheepfoot roller.

Following completion of the rough grading activities, a subgrade layer was placed and compacted to provide support for the CMSD cover construction activities. The subgrade material was placed in maximum 8-inch thick loose lifts and compacted to 95 percent of the material's standard Proctor maximum dry density. The uppermost 6 inches of the subgrade were constructed using fine-grained subgrade material from the Route 7 Borrow Area. As required by the technical specifications, the fine-grained subgrade material was predominantly free of particles greater than 1/4-inch in size. Soils information and compaction testing reports are provided in Appendix A.

5.4 COLLECT AND TREAT CMSD SEEPS

The Record of Decision required that the identified CMSD seeps be remediated by the construction of seepage collection systems. The collection system consisted of gravel-filled trenches that were installed along portions of the CMSD perimeter. The approved design required that this collection system be installed only along the western perimeter of the CMSD. However, during regrading of the riverside (southern) portions of the CMSD, two isolated seeps were observed on the riverside face of the unit. In response to this conditions, the design of the seep collection system was modified to extend the collection system along the southern perimeter of the CMSD. This design modification was communicated to U.S. EPA in correspondence dated August 28, 1997.

The CMSD seep collection system was constructed by excavating shallow trenches along the western and southern perimeter of the unit. The trenches were lined with an 8-ounce layer of non-woven geofabric and filled with coarse aggregate material (ODOT No. 6 Stone). A 4-inch perforated HDPE drain pipe was installed within the stone to convey the collected seepage to a series of four 48-inch diameter HDPE sumps. Within each sump, a submersible pump (G&L Model 2ED11F4GA) was installed. The pump, operated by level controls, was installed to convey the collected seepage (via 2-inch polyethylene piping) to a pre-treatment system located adjacent to Ormet Primary's groundwater treatment plant. Following installation, the entire length of transfer piping was hydrostatically tested at 75 psi for 30 minutes as described in the *Construction Field Sampling Plan* and technical specifications. Copies of pipe testing logs are provided in Appendix D.

In accordance with the approved design, the installed pre-treatment system included units to remove sediments, oil and/or grease, and PCBs and other constituents amenable to adsorption on activated carbon. Sediments are removed through two particle filters (Rosedal Model 8 equipped with a 1 micron bag) operated in series. Following the bag filters, a oil adsorbent canister (containing Boni Fibers) was installed to remove oil and/or grease and two 390 pound granular

activated carbon units, manufactured by EncoTech of Donora, Pennsylvania, were installed to remove PCBs and other organic constituents. From the carbon units, piping was installed in order to discharge the pre-treated liquids to the Ormet Primary groundwater treatment plant.

5.5 CONSTRUCT TSCA CELL

Following completion of CMSD regrading activities in the immediate TSCA disposal cell vicinity, construction of the cell bottom was implemented. As discussed in the approved design documents, the bottom liner consisted, in ascending order, of:

- Lowermost barrier system
- Leakage detection layer/groundwater monitoring layer
- Primary liner, and
- Leachate collection system.

Additional information regarding each of these components is presented in the following sections.

5.5.1 Lowermost Barrier System

The lowermost barrier is a composite barrier system, consisting of a minimum 1-foot thick silty clay soil subgrade, geosynthetic clay layer, and HDPE liner. Additional information on each of these layers is provided in the following section.

Silty Clay Soil Subgrade Placement

The silty clay soil subgrade was constructed by spreading Silty Clay Fill material from the Route 7 Borrow Area in loose lifts, 8-inches thick or less, and conditioning the soil to an appropriate moisture content for compaction (-2 to +2 percent of optimum). The material was then compacted, using sheepsfoot rollers, to at least 95 percent of its Standard Proctor maximum dry density. Compaction reports for this layer are provided in Appendix A. The subgrade surface was then proof-rolled to provide an acceptable surface for the geosynthetic clay liner.

The provisions of the *Construction Field Sampling Plan* required that survey information be collected on a 50-foot grid system to document the thickness of the silty clay soil subgrade. A summary of the survey information collected by Vernon Surveying documenting the thickness of

the silty clay soil subgrade is provided on Table 6. The survey information confirmed that at least 1 foot of Silty Clay Fill was placed at each location.

Geosynthetic Clay Liner Installation

Following subgrade preparation activities, a geosynthetic clay liner (GCL) was placed over the limits of the TSCA Cell base. The GCL utilized for the project was Bentofix manufactured by Albarrie Naue Ltd. of Barrie, Ontario. Prior to installation, the results of material testing performed by the manufacturer for the rolls of GCL delivered to the site were reviewed to verify that the GCL met the requirements listed in the *Construction Field Sampling Plan*. The manufacturer's testing results are presented in Appendix E.

The GCL was placed, non-woven geofabric side down, over the entire TSCA Cell limits by GSI. The GCL was placed to conform with the existing subgrade surface and the panels were oriented parallel to the direction of slope. Adjacent panels of GCL were overlapped at least 6 inches. The GCL was installed in accordance with the manufacturer's recommendations and the *Construction Field Sampling Plan*. Documentation of the QA/QC observations during installation of the GCL are presented in Appendix E.

High Density Polyethylene Liner Installation

In order to maximize the effectiveness of the lowermost barrier system, the approved design required the placement of a textured 60-mil high density polyethylene (HDPE) liner over the GCL surface. This component of the lowermost barrier system was installed using textured 60-mil HDPE manufactured by Columbia Lining Systems of Calgary, Alberta. The HDPE liner was installed directly on top of the GCL liner. Prior to installation of the synthetic liner, GSI provided Dames & Moore with the manufacturer's quality control certificates on the HDPE liner and raw materials used in its production. These certificates are included in Appendix E.

The liner rolls were deployed using a spindle-equipped rubber-tired front-end loader and manual labor. The individual HDPE liner panels were oriented parallel to the direction of slope, and adjacent liner panels were overlapped at least 4 inches for seaming. Seams were joined using the double fusion process, whereby the surfaces of adjacent liner panels are melted by a heating element, then pressed together by a trailing roller. The seam produced from the double fusion welding process consists of two fusion weld seams separated by an area of double liner thickness with an entrapped air channel. Repair areas and other difficult welding areas were seamed using

the extrusion welding process, whereby a ribbon of molten polymer is extruded between adjacent liner sheets that have been preheated with an electrode from the welding machine. As the molten polymer cools, it creates a relatively homogeneous seam.

At the beginning of each day's welding, test welds were run from each piece of welding equipment using pieces of HDPE liner and tested to destruction by a field tensile test machine. Once these test welds were approved, GSI personnel initiated seaming of the liner. Dames & Moore personnel observed the seaming process and inspected completed seams in order to identify areas of questionable quality. Weld imperfections, destructive sample locations, and liner punctures were marked and subsequently repaired by extrusion welding of an HDPE liner patch over the area in question. All extrusion welded seams were non-destructively tested along their entire length, utilizing a vacuum box, in order to evaluate their integrity. Documentation of non-destructive testing is presented in Appendix E.

Air pressure testing was used as the primary means of evaluating the integrity of the double-fusion welded seams. This method involved pressurizing the channel between the fusion weld tracks and observing a gauge to detect loss of pressure, if any. Each seam was pressurized with air to approximately 25 to 30 pounds psi and monitored for at least 5 minutes. An allowable pressure loss of 5 psi was tolerated to account for potential expansion of the material due to the applied pressure or variations in temperature (i.e., heating). Seam pressure testing results are summarized in Appendix E. All double fusion welded seams passed the air pressure test. At the end of each seam test, a pin-size hole was made in the test channel at the extreme end of the seam to verify that the seam being tested extended the full length of the weld. Instantaneous loss in pressure was detected upon this puncturing of each test channel indicating that the test results were applicable to the entire seam, and serving as an indicator of the high sensitivity of the test in evaluating the presence of small leaks.

In order to further document the integrity of the field-constructed seams, destructive testing was performed on representative samples of the field seams. The destructive testing was performed for bonded seam strength and peel adhesion by Precision Environmental Laboratories of Orange, California. Testing results on the collected HDPE liner destructive samples are summarized in Appendix E. With the exception of samples DES-4 and DES-7, all destructive samples passed, indicating that the field seams were constructed in accordance with the required construction specifications and *Construction Field Sampling Plan*.

The following explanation is provided with regard to failing samples DES-4 and DES-7. On August 2, 1997, the site experienced a brief period of very light rain during liner extrusion welding activities. In response to this condition, field Quality Assurance personnel requested that a destructive sample be collected (DES-4) from the portion of the field seam which was extrusion welded during this period. The DES-4 testing result indicated peel adhesion results which did not conform to the project requirements. In an effort to bound the non-conforming seam area, additional destructive samples (DES-6 and DES-7) were then collected approximately 20 feet to the east and west of sample location DES-4. While DES-6 indicated acceptable results, sample DES-7 indicated peel adhesion results which did not conform to the project requirements. In accordance with the project requirements, the contractor elected to install a cap strip from DES-6 to the end of the seam installed on August 2, 1997. Vacuum box testing results of the cap strip indicated acceptable results.

5.5.2 Leakage Detection Layer/Groundwater Monitoring Layer Installation

In order to permit discrete monitoring of water beneath the TSCA Cell, a leakage detection/groundwater monitoring layer was installed. The base of the layer was sloped to a sump to permit collection of water, if any, that may migrate through the liner system.

The installed monitoring system consisted of a 12-inch thick sand drainage layer placed over the gently sloping cell bottom, and a synthetic drainage net installed on the steeply graded cell sideslopes. The material for the sand drainage layer ($k \geq 1 \times 10^{-2}$ cm/sec) was supplied from the Grimes Borrow Pit in Grandview, Ohio. Hydraulic conductivity and particle size testing results are provided in Appendix A. The drainage layer was placed in a single lift using a low ground pressure bulldozer. Following placement, thickness measurements were collected to verify the layer exhibited the minimum thickness of 12 inches. These measurements are summarized on Table 7. As shown on Table 7, all collected measurements indicated layer thickness of at least 12 inches.

As mentioned above, a layer of synthetic drainage net was installed on the steeply graded cell sideslopes. The synthetic drainage net, Poly-Net 3000 as manufactured by the National Seal Company, was installed parallel to the direction of slope. Overlapping and seaming of the synthetic drainage net was performed in accordance with the manufacturer's recommendations.

5.5.3 Primary Liner

The primary liner consisted of a 60-mil textured HDPE liner manufactured by Columbia Lining Systems. The primary liner was installed utilizing the same materials, and installation and quality control procedures discussed in Section 5.4.1. Quality assurance observations and testing results on the collected HDPE liner destructive samples are summarized in Appendix E. All destructive samples passed, indicating that the field seams were constructed in accordance with the required construction specifications and *Construction Field Sampling Plan*.

5.5.4 Leachate Collection Layer

The leachate collection layer was constructed in a similar manner to the leakage detection/groundwater monitoring layer discussed in Section 5.4.3. The layer consisted of a 12-inch thick sand drainage layer on the gently sloping cell base and a synthetic drainage net installed over the steep cell sideslopes. The sand drainage layer was placed in a single lift using a low ground pressure bulldozer. Following placement, thickness measurements were made to verify the layer exhibited the minimum thickness of 12 inches. These measurements are summarized on Table 7. As shown on Table 7, all collected measurements indicated a layer thickness of at least 12 inches.

A layer of synthetic drainage net was installed on the steeply graded cell sideslopes. The synthetic drainage net, Poly-Net 3000 as manufactured by the National Seal Company, was installed parallel to the direction of slope. Overlapping and seaming of the synthetic drainage net was performed in accordance with the manufacturer's recommendations.

Following installation of the drainage materials, a non-woven geofabric layer was installed directly over the drainage layer. In accordance with the project requirements, adjacent sheets were overlapped a minimum of 24 inches.

5.6 RELOCATE OUTFALL 004 DISCHARGE

In order to mitigate the potential for stormwater inundation of the Backwater Area during removal and consolidation activities, it was necessary to relocate the Outfall 004 discharge stream. This was accomplished through the construction of a new drainage channel.

In order to manage the Outfall 004 flow, a new drainage channel was constructed through the western limit of the CMSD to discharge directly to the Ohio River. The trapezoidal channel was constructed using Silty Clay Fill material from the Route 7 Borrow Area. The technical specifications required that the material be placed in 8-inch lifts and compacted to 95 percent of the material's Standard Proctor maximum dry density. Due to moist subgrade conditions encountered in the vicinity of the temporary stormwater diversion berm, the initial soil lifts could not be placed in thicknesses of 8-inches or less as required by the technical specifications. Instead, the initial lifts were placed in thicknesses exceeding 8-inches in order to bridge over the soft materials and provide a suitable surface for subsequent compaction activities. The upper lifts of the channel were placed in 8-inch loose lifts and compacted to at least 95 percent of the material's standard Proctor Maximum dry density. Compaction testing reports are provided in Appendix A. Following completion of earthwork activities, 6-inch thick stone-filled wire mattresses were installed along the channel flow surface in accordance with the technical specifications.

The *Construction Field Sampling Plan* required that survey information be collected at 100-foot stations to document channel grade. The plan further required that channel invert grades be within +/- 0.2 feet of the design elevation. A summary of the design and surveyed channel invert elevations is provided on Table 8. As shown on Table 8, several of the surveyed invert elevations did not achieve the required +/- 0.2 foot tolerance. However, based on field observations, the channel appeared to function effectively, and this minor variance was not deemed to adversely affect the performance of the Remedial Action.

5.7 REMOVE CONTAMINATED SEDIMENT FROM BACKWATER AREA

The approved design documents required that contaminated sediment be removed from the Backwater Area and consolidated within the CMSD (i.e., they exhibit a PCB concentration less than 50 mg/kg) or TSCA Cell. The sediment removal activities were required to continue until achievement of the Backwater Area Cleanup Standards summarized on Table 1.

In order to inhibit the potential for adverse impact to the Ohio River from the sediment removal activities, provisions were made to divert stormwater drainage and the Outfall 004 discharge (described in Section 5.6) around the Backwater Area. In addition, in order to minimize the potential for inundation of the area during sediment removal operations, the Backwater Area was isolated from the Ohio River by an earthen isolation structure. The isolation structure was installed in accordance with the *Backwater Area Isolation Structure Plan*. The structure was constructed by first placing a layer of non-woven geofabric across the mouth of the Backwater Area. Following

geofabric installation, silty clay fill from the Route 7 Borrow Area was placed and compacted over the geofabric layer. The isolation structure was installed to elevation 624 in order to prevent inundation of the area from a 1-year flood event (with 2 feet additional free-board for wave action). Sheet piling was also installed on the riverside of the isolation structure to minimize seepage into the Backwater Area. Following construction of the isolation structure and during excavation activities, water within the Backwater Area (and temporary dewatering sumps) was pumped to the temporary treatment system.

Once the area was isolated, the sediment removal activities were performed. The sediment materials were removed using trackhoes operating from the isolation structure and banks of the unit. Removed sediment materials were transferred directly to the TSCA Cell for disposal. Due to the high moisture content of the removed sediment materials, a stabilization program was implemented. The program involved mixing the sediment materials with a pozzolanic material (i.e., Pozzilime) to stabilize the matrix. Following stabilization, the excavated materials were spread in thin lifts (i.e., 1 foot or less) and lightly compacted.

Following removal of potentially impacted sediments from the Backwater Area, representative samples of the underlying soil were obtained to assess whether they exhibited PCB or PAH concentrations above the Cleanup Standards in Table 1. In the event that any sample exceeded the cleanup standards, the grid area associated with that samples was subjected to further removal and verification testing. Further information regarding the verification sampling program is provided in Appendix C. A summary of the Backwater Area verification sampling grid areas and results are provided on Figures 8 and 9. The Backwater Area verification sampling results are also summarized on Table 9. All Backwater Area verification samples exhibited PCB concentrations less than 1 mg/kg and carcinogenic PAH concentrations less than 60 mg/kg.

During Backwater Area removal activities, approximately 8,500 cubic yards of material were consolidated within the TSCA Cell. These activities resulted in excavation of the former Backwater Area (and immediately adjacent areas) to a depth of approximately 25 feet. The approved design did not address backfill of this area. In order to mitigate concerns regarding the long-term stability of adjacent areas (especially the nearby CMSD), Ormet Primary elected to backfill the area. The area of the former Backwater Area was backfilled with fill from the Route 7 Borrow Area to approximately 1 to 2 feet above normal river pool. Following substantial backfill of this area, the installed sheet piling installed on the outer face of the isolation structure was removed, and the remainder of the isolation structure was left in place. To facilitate surface water drainage, areas adjacent to the former Backwater Area were graded to drain into a swale near the

western limit of the CMSD. An outlet pipe was installed through the isolation structure to permit discharge of the stormwater to the Ohio River. In order to protect the isolation structure from erosion due to wave action, rock erosion protection was placed along the riverside face of the structure. These modifications were communicated to U.S. EPA in correspondence dated December 22, 1997.

5.8 INSTALLATION OF THE CMSD AND TSCA CELL

Following completion of the contaminated material excavation and disposal activities and subgrade approval, the contractor installed the dual-barrier cap system over the TSCA Cell and CMSD. With regard to TSCA Cell cap subgrade preparation activities, it should be noted that areas of the fine-grained subgrade material (placed over consolidated sediment material from the Backwater Area) were observed to experience displacement under the loads of operating construction equipment. In response to this condition, the subgrade was reinforced with a biaxial geogrid material (i.e., Tensar BX1100) and additional fine-grained subgrade material was placed over the area. These actions were effective in achieving the required subgrade stability and compaction characteristics. U.S. EPA was informed of this modification in correspondence dated April 14, 1998.

In accordance with the approved design, the dual-barrier cap system over the TSCA Cell and CMSD included, from bottom to top, the following components:

- A low permeability barrier consisting of a geosynthetic clay liner,
- A synthetic liner system consisting of a 40-mil HDPE liner,
- A drainage layer,
- A vegetative soil layer, and
- Erosion protection.

Additional information regarding each of these components is provided below.

5.8.1 Low Permeability Barrier

The secondary cover barrier consisted of a geosynthetic clay liner (GCL). The GCL utilized for the project was Bentofix manufactured by Albarrie Naue Ltd. of Barrie, Ontario. Prior to installation, the results of material testing performed by the manufacturer for the rolls of GCL delivered to the site were reviewed to verify that the GCL met the requirements listed in the

Construction Field Sampling Plan. The manufacturer's testing results and are presented in Appendix E.

The GCL was placed, non-woven geofabric side down, over the entire CMSD and TSCA Cell limits by GSI. The GCL was placed to conform with the existing subgrade surface and, on the steep unit sideslopes, the panels were oriented parallel to the direction of slope. Adjacent panels of GCL were overlapped at least 6 inches. The GCL was installed in accordance with the manufacturer's recommendations and the *Construction Field Sampling Plan*. Documentation of the QA/QC observations during installation of the GCL are presented in Appendix E.

5.8.2 Synthetic Liner System

The primary cover barrier system consisted of a textured 40-mil HDPE liner system manufactured by Columbia Lining Systems of Calgary, Alberta. The HDPE liner was installed directly on top of the GCL liner. Prior to installation of the synthetic liner, GSI provided Dames & Moore with the manufacturer's quality control certificates on the HDPE liner and raw materials used in its production. These certificates are included in Appendix E.

The liner rolls were deployed using a spindle-equipped rubber-tired front-end loader and manual labor. On the steep sideslopes, the individual HDPE liner panels were oriented parallel to the direction of slope, and adjacent liner panels were overlapped at least 4 inches for seaming. Seams were joined using the double fusion process, whereby the surfaces of adjacent liner panels are melted by a heating element, then pressed together by a trailing roller. Repair areas and other difficult welding areas were seamed using the extrusion welding process. All other installation and QA/QC procedures were similar to those described in 5.5.1.

Destructive testing results on the collected HDPE liner samples are provided in Appendix E. All destructive samples passed, indicating that the field seams were constructed in accordance with the required construction specifications and *Construction Field Sampling Plan*.

5.8.3 Drainage Layer

The approved design included a drainage layer consisting of a 12-inch granular drainage layer ($k \geq 1 \times 10^{-2}$ cm/sec). Due to the limited local availability of a cost-effective material (coarse sand and/or gravel) which achieved the project requirements, the design was modified to permit utilization of a synthetic drainage net in lieu of the granular drainage layer. As part of this revision,

the vegetative soil layer thickness was also modified from 18-inches to 24 inches. U.S. EPA was informed of these revisions in correspondence dated July 9, 1997 and September 16, 1997.

A layer of synthetic drainage net (Poly-Net 3000 as manufactured by the National Seal Company) was installed over the entire TSCA Cell/CMSD subgrade. On the steep CMSD sideslopes, the synthetic drainage net was installed parallel to the direction of slope. Overlapping and seaming of the synthetic drainage net was performed in accordance with the manufacturer's recommendations.

During drainage net installation activities, a variance was identified with regard to the interface friction properties between the HDPE liner and the synthetic drainage net. The technical specifications required that the interface between the HDPE liner and synthetic drainage material exhibit a friction angle of at least 20.5 degrees. However, testing results provided by the contractor indicated that the interface between the 40-mil HDPE liner exhibits a peak friction angle of 18 degrees, with adhesion of 4 pound per square foot. Calculations using the test data indicated that the as-built CMSD cover system had a minimum factor of safety of 1.36 against sliding, rather than the design value of 1.5. In response to this data, Ormet Primary petitioned U.S. EPA requesting a design variance on the required friction angle for this interface. This design variance was approved by U.S. EPA in correspondence dated March 30, 1998. A copy of correspondence and calculations associated with this issue has been provided in Appendix F.

Following installation of the drainage materials, a non-woven geofabric layer was installed directly over the drainage layer. In accordance with the project requirements, adjacent sheets were overlapped a minimum of 24 inches.

5.8.4 Vegetative Soil Layer

A 2-foot-thick vegetative soil layer was placed directly over the geofabric surface. The vegetative soil material was obtained from the Route 7 Borrow Area. The vegetative soil layer was placed in loose lifts and was lightly compacted using a low ground pressure bulldozer.

Following placement and fine-grading of the vegetative soil layer, the elevation of the top of the vegetative soil layer was surveyed at a 50-foot grid to assess the thickness of the layer. The results of the grid survey for the CMSD/TSCA Cell vegetative soil layer are summarized in Table 10. The survey results indicated that the average thickness of the vegetative soil layer was 2.4 feet. The provisions of the *Construction Field Sampling Plan* require that either each grid point exhibit a minimum vegetative soil layer thickness of 2 feet or that the entire data set exhibit a minimum

thickness of 2-foot at a 95-percent confidence level. As shown on Table 10, eight points did not achieve the required 2-foot thickness (these points each exhibited a thickness of 1.9 feet). However, subsequent statistical analysis indicate that layer achieved a thickness of 2-foot at a 95-percent confidence level. Therefore, the vegetative soil layer thickness achieved the requirements of the *Construction Field Sampling Plan*.

5.8.5 Erosion Protection

The surface of the vegetative soil layer was seeded and mulched, and a series of run-off controls were constructed across the steeply sloping portions of the CMSD. The installed run-off control system consisted of a series of rock berms (using ODOT Type D Rock Fill) that would inhibit sheet flow perpendicular to the slopes, and direct excess run-off to rock-lined discharge chutes. The trapezoidal discharge chutes were lined with a geofabric layer overlain by a 2-foot layer of ODOT Type C Rock Fill.

In addition to the controls described above, additional erosion protection was also installed adjacent to the CMSD along the Ohio River. Prior to rock placement, a non-woven geofabric layer was placed along proposed rock placement area. An approximately 1.5-foot-thick layer of ODOT Type C Rock Fill was placed. The rock erosion protection was placed to approximately elevation 630.

5.9 INSTALLATION OF THE FSPSA SOIL FLUSHING SYSTEM

The approved design documents required the installation of an enhanced infiltration system within the FSPSA, and placement of a vegetative soil cover. Prior to installation of the flushing system, the FSPSA area was regraded to provide grades between approximately 1 and 3 percent.

The FSPSA flushing system consists of three primary components: the flushing water storage tank, the FSPSA pumping and control system, and the flushing water distribution piping. The flushing water storage tanks consisted on an existing 500,000 gallon, above-ground storage tank located on the Ormet Primary Reduction Facility adjacent to the northwest corner of the Superfund Site. Prior to use in the FSPSA flushing system, the tank was cleaned and upgraded by Ormet Primary to serve as the flushing system storage tank. The primary actions involved constructing a water supply connection pipe between the plant production water distribution system, and installing level controls to prevent overfilling.

The FSPSA pumping and control system consisted of a delivery pump, an hydraulic control valve, and timer controls. The installed delivery pump was a centrifugal pump (Carver L&H 3x2.5.10H) capable of delivering approximately 350 gallons per minute at a total dynamic head of 200 feet. The delivery pump was installed on a concrete pad located adjacent to the tank. The pressure delivered to the flushing system was regulated with an installed hydraulic control valve (Flowmatic Model C600). The timing and duration of the of water delivery was controlled by an automatic timer (Diehl Model TA 4150).

The pumping and control systems convey the flushing water through 6-inch and 3-inch diameter polyvinyl chloride (PVC) distribution piping to a series of parallel 2-inch diameter supply lines connected to 93 sprinkler heads. Following installation, the entire system of delivery piping was hydrostatically tested at 150 psi for 60 minutes as described in the *Construction Field Sampling Plan* and technical specifications. Copies of pipe testing logs are provided in Appendix D. The sprinkler heads installed as part of the FSPSA delivery system are Super 700 Series as manufactured by The Toro Company. The sprinkler heads are capable of delivering a 45-foot spray radius at a supply pressure of 65 psi. The individual flow rates under these conditions range from approximately 3 to 4 gallons per minute.

Following regrading and installation of the water distribution system, an approximately 6-inch thick vegetative soil cover was placed over the area. The specifications required that the material consist of a silty sand with a permeability between 1×10^{-3} cm/sec and 1×10^{-5} cm/sec. Due to trafficability and flushing system maintenance concerns, Ormet Primary desired to use sand in lieu of the material specified. The material used was obtained from Brown's Gravel Pit in Sardis, Ohio and consisted of a fine to coarse sand. Hydraulic conductivity testing indicated the material exhibited a permeability of 6.3×10^{-3} cm/sec. FSPSA cover material testing results are provided in Appendix A. U.S. EPA was informed of this minor revision in correspondence dated October 13, 1997.

Following placement and fine-grading of the vegetative soil cover, the elevation of the top of the vegetative soil layer was surveyed at a 50-foot grid to assess the thickness of the layer. The results of the grid survey for the FSPSA soil layer are summarized in Table 11. The survey results indicate that the average thickness of the vegetative soil layer was 0.7 feet. As shown on Table 11, each grid point exhibited a thickness of at least 6 inches.

In addition to the activities described above, two supplementary components were added to enhance the performance of the FSPSA flushing system. Following periods of heavy rain, surface

water was observed to frequently pond in the southern portion of the FSPSA. In order to minimize ponding and thereby deliver additional water to the subsurface, a series of shallow infiltration trenches were installed in the regraded FSPSA material. The infiltration trenches were installed to an approximate depth of 1.5 feet, and were filled with ODOT No. 6 stone. The second improvement involved adding a shallow sump equipped with a small (i.e., 1/3 horsepower) recirculation pump to the southern FSPSA area susceptible to ponding. The recirculation pump conveys the water to the northernmost portion of the FSPSA where the water is discharged to the surface via a spray-hose.

5.10 CONSTRUCTION OF SITE FENCING

After substantial completion of construction activities, a chain-link fence system was installed to enclose the FSPSA, CMSD, former CRDA and former Backwater Area. The location of the fencing is depicted on the As-built Drawing, provided as Appendix G. The constructed fence system was 6-foot chain-link fence equipped with three strands of barbed wire. The fence conforms with the requirements of Section 511.12 of the Ohio Department of Transportation Specifications. The fence was installed by Aconomy Fencing.

5.11 SITE RESTORATION

Following completion of the earthwork activities, site restoration activities were implemented. These consisted of removing equipment and debris associated with the construction activities, fertilizing, liming, and seeding and mulching soil areas disturbed by construction. Seeding and mulching activities were performed by Schoenbrunn Hydroseeding, Inc. of Dover, Ohio. These activities were performed utilizing typical landscaping equipment (i.e., mulch/seed blower).

6.0 PRE-FINAL/FINAL INSPECTION

Upon substantial completion of the construction activities, a Pre-Final/Final Inspection was held. The inspection was held on June 11, 1998, and was attended by representatives of the U.S. EPA, the U.S. Army Corps of Engineers, Ormet Primary, O'Brien & Gere, and Dames & Moore. The attendees listed outstanding components of construction, and discussed identified variances between the completed construction and the approved Remedial Design. Areas subject to remedial construction activities were observed and the construction activities were described. Questions

raised by the attendees were addressed, and a short list for completion of remaining remedial construction activities was developed.

7.0 VARIANCES FROM THE APPROVED DESIGN

Remedial construction activities associated with the Ormet Primary Superfund site were performed in substantial conformance with the *Final Design Report*, *Construction Quality Assurance Project Plan*, and *Construction Field Sampling Plan* with no significant modifications or variances observed. The minor modifications/variances that were implemented with U.S. EPA notification and/or approval included:

- The CMSD Seep Collection System was extended around the southern toe-of-slope of the CMSD. This action was performed to capture two isolated seeps that were observed on the riverside (southern) face of the unit.
- During portions of the temporary stormwater diversion berm and Outfall 004 drainage channel construction activities, wet subgrade conditions were encountered. In response to this condition, the initial soil lifts in these areas were placed in thicknesses exceeding the specified maximum 8-inch loose lift thickness. The upper soil lifts of these components were placed and compacted in accordance with the requirements of the technical specifications.
- Several of the Outfall 004 drainage channel invert elevations do not achieve the tolerances (+/- 0.2 feet of design elevation) required by the *Construction Field Sampling Plan*. The channel appears to be functioning effectively and this minor variance is not believed to adversely affect the performance of the Remedial Action.
- Due to verification sampling activities being performed during hot summer days and the site's close proximity to the analytical laboratory, several of the verification sample coolers could not be cooled to the required 4 degree C (+/- 2 degrees) prior to sample log in at the laboratory.
- The Backwater Area isolation berm was left in place and the area was filled with imported soil. The fencing in this area was also revised to accommodate this change.
- Due to soft areas encountered on the TSCA Cell subgrade surface, a geogrid and additional material was added to stabilize the cover system subgrade. These actions were effective in achieving the required subgrade stability and compaction characteristics.
- Due to the volume of material removed from the CRDA and Backwater Area, the design of the TSCA Cell (liner transitions and surface grades) was revised to accommodate this additional material.
- The design of the CMSD cover system was revised to incorporate a synthetic drainage net layer and a 24-inch vegetative cover in lieu of the specified 12-inch drainage layer and 18-inch vegetative cover.

- The interface between the CMSD cover system HDPE liner and synthetic drainage net does not achieve the specified 20.5 degree internal friction angle. Based upon testing results provided by the contractor, the installed materials provide a peak friction angle of 18 degrees, with adhesion of 4 pounds per square foot. Calculations using the test data indicate the as-built CMSD cover system has a minimum factor of safety of 1.36 against sliding, rather than the design value of 1.5.
- A series of shallow gravel trenches and a recirculation pump were installed in the FSPSA to mitigate ponding water in the southern portion of the unit.
- Due to maintenance concerns, the FSPSA cover soil utilized consisted of a sand material in lieu of the specified silty sand material.

TABLE 1

**SUMMARY OF VERIFICATION SAMPLING ANALYTICAL METHODS AND
CLEANUP STANDARDS FOR THE CRDA AND BACKWATER AREA**

**ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO**

Constituent	Analytical Method	Backwater Area Sediment Cleanup Standard ($\mu\text{g/kg}$)	CRDA Soil Cleanup Standard ($\mu\text{g/kg}$)
Carcinogenic PAHs, Total	SW-846 Method 8270	60,000	60,000
Benzo(a)Anthracene			
Benzo(b)Fluoranthene			
Benzo(k)Fluoranthene			
Benzo(g,h,i)Perylene			
Benzo(a)Pyrene			
Indeno(1,2,3-cd)Pyrene			
Dibenz(a,h)Anthracene			
Chrysene			
Polychlorinated Biphenyls	SW-846 Method 8081	1,000	1,000 or 10,000 (1)

Notes:

- 1 This value is an alternate CRDA Soil Cleanup Standard, petitioned for use by Ormet Primary based upon additional control (soil cover) and industrial land use scenarios.

TABLE 2
SUMMARY OF CRDA STAGE I VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Sample Result Meets PCB Clean-up Standard (≤50 mg/kg)
SS-1	SS-1	5/20/97	ND	Yes
SS-2	SS-2	5/23/97	ND	Yes
SS-3	SS-3	5/29/97	0.047	Yes
SS-4	SS-4	5/29/97	1.4	Yes
SS-5	SS-5A	6/5/97	4.7	Yes
SS-6	SS-6A	6/5/97	1.9	Yes
SS-7	SS-7	5/29/97	7.7	Yes
SS-8	SS-8A*	6/11/97	5.2	Yes
SS-9	SS-9A*	6/11/97	5.4	Yes
SS-10	SS-10A*	6/11/97	13	Yes
SS-11	SS-11	5/30/97	3.4	Yes
SS-12	SS-12*	6/30/97	0.26 0.25(D)	Yes
SS-13	SS-13A	6/18/97	0.14	Yes
SS-14	SS-14	6/12/97	6.5	Yes
SS-15	SS-15A	6/17/97	20	Yes
SS-16	SS-16B*	6/30/97	2.5	Yes
SS-17	SS-17B	6/27/97	5.2	Yes

Notes:

ND - Not detected

(D) - Denotes duplicate sample result

* Indicates sample temperature exceeded 6 degrees C at time of laboratory acceptance.

TABLE 3
SUMMARY OF CRDA STAGE II VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)
SS-18	SS-18	6/17/97	0.2	30.5
SS-19	SS-19	6/19/97	0.18	27.7
SS-20	SS-20, SS-120	6/19/97, 7/17/97	0.2	3.22
SS-21	SS-21	7/2/97	0.048	43.3
SS-22	SS-122	7/17/97	0.038	3.17
SS-23	SS-123	7/17/97	0.19	5.38
SS-24	SS-24	6/19/97	0.13	50.7
SS-25	SS-125	7/17/97	0.028	1.39
SS-26	SS-26, SS-126	6/25/97, 7/17/97	0.57	0.43
SS-27	SS-27, SS-127	6/25/97, 7/17/97	0.7	2.06
SS-28	SS-28, SS-128	6/25/97, 7/17/97	0.66	1.2
SS-29	SS-29, SS-129	6/25/97, 7/17/97	0.21	2.4
SS-30	SS-30, SS-130	6/25/97, 7/17/97	0.17	1.61
SS-31	SS-31, SS-131	6/25/97, 7/17/97	0.71	2.22
SS-32	SS-32, SS-132	6/25/97, 7/17/97	0.26	2.39
SS-33	SS-33, SS-133	6/25/97, 7/17/97	0.081	0.18
SS-34	SS-34, SS-134	6/25/97, 7/17/97	0.096	ND
SS-35	SS-35, SS-135	6/25/97, 7/17/97	0.28 0.33 (D)	49.51
SS-36	SS-36, SS-136	6/25/97, 7/17/97	0.1	53.62

TABLE 3
SUMMARY OF CRDA STAGE II VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)
SS-37	SS-37, SS-137	6/25/97, 7/17/97	0.096	32.34
SS-38	SS-38, SS-138	6/25/97, 7/17/97	0.025	0.85
SS-39	SS-39, SS-139	6/25/97, 7/17/97	0.31	ND
SS-40	SS-40, SS-140	6/25/97, 7/17/97	0.31	5.1
SS-43	SS-143	7/17/97	ND	1.52
SS-44	SS-44*	6/27/97	0.51 0.67 (D)	38.2 44.5 (D)
SS-45	SS-45	7/2/97	0.58	17.98
SS-46	SS-46	7/2/97	0.74	16.09
SS-47	SS-47, SS-147	7/2/97, 7/17/97	0.13	14.17
SS-48	SS-48, SS-148	7/2/97, 7/17/97	0.11 0.096(D)	28.4 37.3 (D)
SS-50	SS-50, SS-150	7/9/97, 7/17/97	0.095	7.01
SS-51	SS-51, SS-151	7/9/97, 7/17/97	0.056	0.53
SS-52	SS-52	7/2/97	0.071	16.39
SS-53	SS-53	7/2/97	0.047 0.044 (D)	17.24 18.97 (D)
SS-54	SS-54, SS-154	7/9/97, 7/17/97	0.16	2.32
SS-56	SS-56, SS-156	7/9/97, 7/17/97	0.051	21.5 16.93 (D)
SS-57	SS-57	7/2/97	0.16	22.57
SS-58	SS-58	7/3/97	0.21	20.15

TABLE 3
SUMMARY OF CRDA STAGE II VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)
SS-59	SS-59, SS-159	7/3/97, 7/17/97	0.47	0.85
SS-60	SS-60	7/3/97	0.078	14.37
SS-61	SS-61	7/3/97	0.42	6.82
SS-62	SS-62, SS-162	7/3/97, 7/17/97	0.021 ND (D)	28.8
SS-63	SS-63	7/8/97	0.51	8.63
SS-64	SS-64	7/8/97	0.024	2.52
SS-65	SS-65	7/9/97	ND	8.13
SS-66	SS-66	7/3/97	0.22	40.9

Notes:

ND - Not detected

(D) - Denotes duplicate sample result

* Indicates sample temperature exceeded 6 degrees C at time of laboratory acceptance.

TABLE 4
SUMMARY OF CRDA STAGE III VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)	Sample Results Meets Clean-up Standards
SS-41	SS-41	6/27/97	0.83 0.91 (D)	4.97 3.93 (D)	Yes
SS-42	SS-42	6/27/97	0.33	10.6	Yes
SS-70	SS-70	9/26/97	0.20	2.61	Yes
SS-71	SS-71	9/26/97	ND	ND	Yes
SS-72	SS-72	9/26/97	ND	1.26	Yes
SS-73	SS-73	9/26/97	0.018	11.94	Yes
SS-74	SS-74	9/26/97	0.03 0.029 (D)	5.17 21.6 (D)	Yes
SS-75	SS-75	10/2/97	5.3	17.28	Yes, with soil cover
SS-76	SS-76	10/2/97	0.34	9.97	Yes
SS-77	SS-77	10/2/97	0.07	26.3	Yes
SS-78	SS-78	10/2/97	1.3	48.2	Yes, with soil cover
SS-79	SS-79	10/2/97	0.83 1.0 (D)	12.46 25.37 (D)	Yes
SS-80	SS-80, SS-80R-2	10/12/97, 10/13/98	0.37	22.73	Yes
SS-81	SS-81R	10/13/97	ND	38.2	Yes
SS-86	SS-86	10/31/97	ND	ND	Yes

Notes:

ND - Not detected

(D) - Denotes duplicate sample result

TABLE 5

SUMMARY OF CRDA COVER THICKNESS MEASUREMENTS
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Approximate Coordinates		Approximate Excavation Base Elevation (ft, msl)	Approximate Final Grade Elevation (ft, msl)	Cover Thickness (ft)	Achieved Specification
	Northing	Easting				
SS-75	N1400	W3400	630.8	631.7	0.9	Yes
	N1400	W3350	627.8	632.0	4.2	Yes
	N1450	W3400	630.6	631.6	1.0	Yes
	N1450	W3350	628.0	632.0	4.0	Yes
SS-78	N1300	W3365	629.5	631.0	1.5	Yes
	N1300	W3400	627.8	630.5	2.7	Yes
	N1350	W3350	629.9	631.9	2.0	Yes
	N1350	W3400	625.8	630.5	4.7	Yes

TABLE 6

SUMMARY OF TSCA CELL SILTY CLAY SUBGRADE SURVEY INFORMATION

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Survey Coordinates		Top of Regraded Waste Elevation (ft, msl)	Top of Silty Clay Fill Elevation (ft, msl)	Layer Thickness (ft)	Achieved Specification
Northing	Easting				
N1550	W3050	663.3	664.8	1.5	Yes
N1550	W3000	657.1	658.1	1.0	Yes
N1500	W3100	659.1	660.5	1.4	Yes
N1500	W3050	647.0	648.2	1.2	Yes
N1500	W3000	642.5	643.5	1.0	Yes
N1500	W2950	661.1	663.5	2.4	Yes
N1450	W3100	661.7	662.7	1.0	Yes
N1450	W3050	639.1	641.5	2.3	Yes
N1450	W3000	637.9	639.0	1.0	Yes
N1450	W2950	650.9	652.5	1.6	Yes
N1400	W3050	650.0	652.7	2.7	Yes
N1400	W3000	640.3	641.3	1.0	Yes
N1400	W2950	651.5	653.0	1.5	Yes
N1400	W2900	663.6	664.7	1.0	Yes
N1350	W3050	662.4	663.8	1.4	Yes
N1350	W3000	660.7	663.2	2.4	Yes

TABLE 7

SUMMARY OF TSCA CELL LAYER DRAINAGE MATERIAL THICKNESS MEASUREMENTS

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Cell Layer	Measurement Identifier	Estimated Coordinates		Measured Layer Thickness (Inches)	Achieved Specification
		Northing	Easting		
Leachage Detection/ Ground Water Monitoring Layer	LDL - 1	W3034	N1459	13	Yes
	LDL - 2	W3016	N1468	12	Yes
	LDL - 3	W3012	N1437	12	Yes
	LDL - 4	W3008	N1407	14	Yes
	LDL - 5	W2987	N1416	12	Yes
Leachate Collection Layer	LCL - 1	W3032	N1452	12	Yes
	LCL - 2	W3011	N1479	12	Yes
	LCL - 3	W3010	N1439	13	Yes
	LCL - 4	W3008	N1408	14	Yes
	LCL - 5	W2982	N1413	13	Yes

TABLE 8
RELOCATED OUTFALL 004 CHANNEL INVERT SUMMARY
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Channel Station	Design Invert Elevation (ft, msl)	Surveyed Invert Elevation (ft, msl)	Deviation (ft)	Achieved Specification
0+86.5	640.0	640.0	0.0	Yes
1+00	639.3	638.5	0.8	No
1+50	636.8	636.2	0.6	No
2+00	635.0	634.3	0.7	No
2+50	631.8	631.9	-0.1	Yes
3+07	629.0	629.0	0.0	Yes
3+50	626.8	627.2	-0.4	No
4+00	625.3	627.2	-1.9	No
4+50	625.1	625.1	0.0	Yes
5+00	625.0	625.0	0.0	Yes
5+50	624.9	624.9	0.0	Yes
6+00	624.8	624.7	0.1	Yes
6+50	624.6	624.7	-0.1	Yes
7+00	624.5	624.6	-0.1	Yes
7+50	624.4	624.4	0.0	Yes
8+00	624.3	623.7	0.6	No
8+50	624.1	623.3	0.8	No

TABLE 9
SUMMARY OF BACKWATER AREA VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)	Sample Results Meets Clean-up Standards
SS-82	SS-82	10/24/97	ND	ND	Yes
SS-83	SS-83	10/24/97	ND	ND	Yes
SS-84(+)	SS-84(+)	10/31/97	ND	ND	Yes
SS-85(+)	SS-85(+)	10/31/97	ND	ND	Yes
SS-87	SS-87	10/31/97	0.08	ND	Yes
SS-88(+)	SS-88(+)	10/31/97	ND ND (D)	ND ND (D)	Yes
SS-89	SS-89	10/31/97	ND	ND	Yes
SS-90(+)	SS-90(+)	10/31/97	0.04**	ND	Yes
SS-91	SS-91	10/31/97	ND	ND	Yes
SS-92(+)	SS-92(+)	10/31/97	ND	ND	Yes
SS-93(+)	SS-93(+)	10/31/97	ND	ND	Yes
SS-94	SS-94	11/17/97	ND	ND	Yes
SS-95	SS-95	11/20/97	0.06	ND	Yes
SS-96	SS-96	11/23/97	ND	ND	Yes
SS-97	SS-97	11/24/97	ND	ND	Yes
SS-98	SS-98	11/24/97	ND	ND	Yes
SS-99	SS-99	11/24/97	ND	ND	Yes
SS-100	SS-100	11/24/97	ND	ND	Yes
SS-101	SS-101	11/25/97	ND	ND	Yes
SS-102	SS-102	11/25/97	ND	ND	Yes
SS-103	SS-103	11/25/97	ND	ND	Yes
SS-104A	SS-104A	12/3/97	ND	ND	Yes
SS-104B	SS-104B	12/3/97	ND	ND	Yes
SS-104C	SS-104C	12/3/97	ND	ND	Yes
SS-104D	SS-104D	12/3/97	ND	ND	Yes
SS-105	SS-105	12/5/97	ND	ND	Yes

Notes:

ND - Not detected

(D) - Denotes duplicate sample result

(+) - Denotes sidewall area/sample

** Indicates result reported on a wet-weight basis due to limited sample volume.

TABLE 10

SUMMARY OF CMSD/TSCA CELL VEGETATIVE COVER SURVEY INFORMATION

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Northing	Easting	Top of Liner Elevation (feet, msl)	Top of Vegetative Cover Elevation (feet, msl)	Vegetative Cover Thickness (feet)
1050	3300	631.3	633.9	2.6
1050	3350	636.2	638.0	1.9
1100	3200	634.0	636.0	2.0
1100	3250	638.6	640.6	2.0
1100	3300	642.9	645.1	2.1
1100	3350	643.5	646.3	2.8
1100	3400	634.5	636.9	2.4
1150	3100	635.6	637.6	2.0
1150	3150	640.5	642.5	2.0
1150	3200	645.2	647.2	2.0
1150	3250	649.8	651.8	2.0
1150	3300	652.1	654.1	2.0
1150	3350	642.4	644.9	2.4
1150	3400	630.9	633.6	2.7
1200	3000	636.9	639.1	2.1
1200	3050	642.3	644.4	2.1
1200	3100	647.2	649.1	1.9
1200	3150	652.0	653.9	1.9
1200	3200	656.1	658.0	2.0
1200	3250	658.3	661.7	3.4
1200	3300	649.9	652.9	3.0
1200	3350	638.5	641.4	2.8
1250	2900	634.2	636.1	1.9
1250	2950	641.5	643.4	1.9
1250	3000	649.2	651.2	2.0
1250	3050	654.5	656.8	2.3
1250	3100	658.7	660.7	2.0
1250	3150	662.8	664.8	2.0
1250	3200	664.0	666.1	2.1
1250	3250	657.4	660.3	2.8
1250	3300	646.3	649.1	2.8
1250	3350	634.9	637.5	2.6

TABLE 10

SUMMARY OF CMSD/TSCA CELL VEGETATIVE COVER SURVEY INFORMATION

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Northing	Easting	Top of Liner Elevation (feet, msl)	Top of Vegetative Cover Elevation (feet, msl)	Vegetative Cover Thickness (feet)
1300	2800	630.8	633.5	2.7
1300	2850	637.5	639.9	2.3
1300	2900	644.8	647.0	2.1
1300	2950	652.0	654.3	2.2
1300	3000	659.8	661.8	2.0
1300	3050	664.2	666.2	2.0
1300	3100	665.5	667.5	2.1
1300	3150	665.8	668.1	2.3
1300	3200	664.4	666.3	1.9
1300	3250	653.8	656.7	2.9
1300	3300	642.3	645.0	2.8
1300	3350	631.1	633.3	2.2
1350	2850	648.8	650.8	2.0
1350	2900	655.6	657.8	2.2
1350	2950	663.3	665.3	2.0
1350	3000	666.7	669.4	2.7
1350	3050	664.4	670.1	5.7
1350	3100	666.8	669.5	2.7
1350	3150	666.6	668.5	1.9
1350	3200	662.1	664.6	2.5
1350	3250	649.9	652.7	2.8
1400	2900	664.6	666.9	2.3
1400	2950	670.1	672.1	2.0
1400	3000	671.4	673.9	2.6
1400	3050	667.5	672.0	4.5
1400	3100	667.5	670.5	3.1
1400	3150	666.0	668.1	2.1
1400	3200	657.7	660.1	2.4
1400	3250	645.4	647.5	2.0
1400	3300	632.9	635.1	2.3

TABLE 10

SUMMARY OF CMSD/TSCA CELL VEGETATIVE COVER SURVEY INFORMATION

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Northing	Eastng	Top of Liner Elevation (feet, msl)	Top of Vegetative Cover Elevation (feet, msl)	Vegetative Cover Thickness (feet)
1450	2950	670.0	672.2	2.2
1450	3000	672.4	674.5	2.1
1450	3050	671.3	673.4	2.1
1450	3100	665.7	670.4	4.7
1450	3150	665.1	667.1	1.9
1450	3200	653.3	655.4	2.0
1450	3250	640.5	642.5	2.0
1500	2950	666.3	668.7	2.4
1500	3000	671.0	673.0	2.1
1500	3050	669.4	671.5	2.1
1500	3100	665.9	668.6	2.7
1500	3150	662.5	664.6	2.0
1500	3200	649.0	650.9	2.0
1500	3250	636.6	638.6	2.0
1550	3000	667.4	669.4	2.0
1550	3050	665.0	667.4	2.4
1550	3100	664.0	666.0	2.0
1550	3150	656.9	658.9	2.0
1550	3200	644.3	646.3	2.0
1600	3000	663.8	665.8	2.0
1600	3050	661.0	663.0	2.0
1600	3100	655.3	657.3	2.0
1600	3150	648.2	651.0	2.8
1650	3000	653.7	657.5	3.8
1650	3050	650.7	653.1	2.4
Average Cover Thickness =				2.4

TABLE 11
SUMMARY OF FSPSA SURVEY INFORMATION

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Northing	Easting	Pre-construction Elevation (feet, msl)	Elevation Following Regrading (feet, msl)	Elevation Following Cover Placement (feet, msl)	Cover Thickness (feet)
N 2200	E 2900	651.4	652.3	653.0	0.7
N 2200	E 2950	653.3	651.8	652.6	0.8
N 2200	E 3000	652.8	651.9	652.5	0.6
N 2250	E 2850	651.5	651.8	652.6	0.8
N 2250	E 2900	651.6	651.0	652.2	1.2
N 2250	E 2950	652.2	650.8	651.6	0.8
N 2250	E 3000	652.9	650.5	651.8	1.2
N 2250	E 3050	652.9	651.9	652.4	0.5
N 2250	E 3100	652.8	652.2	653.0	0.8
N 2300	E 2850	652.0	651.7	652.9	1.2
N 2300	E 2900	651.3	651.0	652.7	1.7
N 2300	E 2950	651.7	650.7	651.6	0.9
N 2300	E 3000	652.3	651.4	652.2	0.8
N 2300	E 3050	654.0	653.0	653.5	0.5
N 2300	E 3100	654.5	652.5	653.3	0.8
N 2300	E 3150	654.8	652.7	653.7	0.9
N 2300	E 3200	652.3	653.2	653.7	0.6
N 2300	E 3250	655.7	653.7	654.3	0.6
N 2350	E 2800	652.4	652.5	653.0	0.5
N 2350	E 2850	652.5	652.4	653.3	0.9
N 2350	E 2900	651.6	651.8	652.9	1.1
N 2350	E 2950	652.0	651.9	652.5	0.6
N 2350	E 3000	651.9	652.2	652.9	0.7
N 2350	E 3050	652.7	652.9	653.4	0.5
N 2350	E 3100	653.1	652.8	653.8	1.0
N 2350	E 3150	653.2	652.9	653.9	0.9
N 2350	E 3200	652.3	653.6	654.3	0.7
N 2350	E 3250	654.6	653.9	654.4	0.5
N 2350	E 3300	654.3	653.9	654.4	0.5
N 2350	E 3350	654.1	654.2	654.7	0.5

TABLE 11
SUMMARY OF FSPSA SURVEY INFORMATION

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Northing	Easting	Pre-construction Elevation (feet, msl)	Elevation Following Regrading (feet, msl)	Elevation Following Cover Placement (feet, msl)	Cover Thickness (feet)
N 2400	E 2800	652.7	652.7	653.3	0.6
N 2400	E 2850	652.8	652.8	653.4	0.6
N 2400	E 2900	651.9	652.2	653.1	0.9
N 2400	E 2950	652.1	652.5	653.5	1.0
N 2400	E 3000	652.3	652.9	653.5	0.6
N 2400	E 3050	652.8	653.0	653.7	0.7
N 2400	E 3100	653.6	653.5	654.4	0.9
N 2400	E 3150	653.6	653.3	654.4	1.1
N 2400	E 3200	653.8	653.8	654.6	0.8
N 2400	E 3250	654.9	654.3	654.7	0.5
N 2400	E 3300	654.9	654.5	655.3	0.8
N 2400	E 3350	656.0	656.4	657.0	0.5
N 2450	E 2800	653.4	653.3	653.7	0.5
N 2450	E 2850	653.3	653.2	653.7	0.5
N 2450	E 2900	652.6	653.0	653.7	0.7
N 2450	E 2950	652.5	652.9	653.6	0.7
N 2450	E 3000	652.8	653.2	653.8	0.7
N 2450	E 3050	653.6	653.8	654.3	0.5
N 2450	E 3100	654.1	653.8	655.0	1.2
N 2450	E 3150	653.6	653.7	654.5	0.9
N 2450	E 3200	653.8	654.3	655.0	0.7
N 2450	E 3250	654.4	654.4	655.3	0.9
N 2450	E 3300	655.6	654.8	655.3	0.5
N 2500	E 2800	654.1	653.3	654.0	0.7
N 2500	E 2850	653.9	653.6	654.4	0.8
N 2500	E 2900	652.9	653.7	654.6	0.9
N 2500	E 2950	653.0	653.8	654.3	0.5
N 2500	E 3000	653.0	654.0	654.9	0.9
N 2500	E 3050	653.5	654.6	655.2	0.5
N 2500	E 3100	655.1	654.9	655.7	0.8
N 2500	E 3150	654.2	655.3	655.9	0.7
N 2500	E 3200	655.4	655.2	655.9	0.7
N 2500	E 3250	656.3	655.2	655.8	0.6
N 2500	E 3300	655.9	655.2	655.9	0.7

**TABLE 11
SUMMARY OF FSPSA SURVEY INFORMATION**

**ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO**

Northing	Easting	Pre-construction Elevation (feet, msl)	Elevation Following Regrading (feet, msl)	Elevation Following Cover Placement (feet, msl)	Cover Thickness (feet)
N 2550	E 2750	654.6	654.4	655.1	0.7
N 2550	E 2800	654.6	654.0	654.8	0.8
N 2550	E 2850	654.7	654.6	655.3	0.7
N 2550	E 2900	653.6	654.6	655.1	0.5
N 2550	E 2950	654.0	654.4	655.2	0.8
N 2550	E 3000	653.3	655.0	656.1	1.0
N 2550	E 3050	655.3	655.7	656.2	0.5
N 2550	E 3100	656.2	655.9	656.7	0.8
N 2550	E 3150	655.9	656.2	657.0	0.8
N 2550	E 3200	656.5	656.5	657.3	0.9
N 2550	E 3250	656.1	656.7	657.3	0.6
N 2550	E 3300	657.0	656.2	656.9	0.7
N 2600	E 2700	654.6	654.6	655.5	0.9
N 2600	E 2750	655.3	655.1	655.9	0.8
N 2600	E 2800	655.7	655.4	655.9	0.5
N 2600	E 2850	655.5	655.3	656.0	0.7
N 2600	E 2900	654.9	655.3	656.0	0.7
N 2600	E 2950	655.0	655.3	656.1	0.8
N 2600	E 3000	657.5	655.9	656.9	1.0
N 2600	E 3050	657.6	656.6	657.5	0.9
N 2600	E 3100	657.4	657.2	658.0	0.8
N 2600	E 3150	657.9	657.6	658.2	0.6
N 2600	E 3200	657.8	658.0	658.6	0.6
N 2600	E 3250	659.2	658.0	658.5	0.5
N 2600	E 3300	658.3	658.0	658.5	0.5
N 2650	E 2750	656.0	655.5	656.3	0.9
N 2650	E 2800	656.4	655.7	656.4	0.7
N 2650	E 2850	656.7	655.9	656.5	0.6
N 2650	E 2900	657.3	655.8	656.8	1.0
N 2650	E 2950	658.3	656.4	657.5	1.1
N 2650	E 3000	657.8	657.2	657.8	0.6
N 2650	E 3050	658.3	657.4	658.4	0.9
N 2650	E 3100	658.3	658.1	658.7	0.6
N 2650	E 3150	660.1	658.8	659.4	0.6
N 2650	E 3200	657.8	659.6	660.2	0.6
N 2650	E 3250	663.3	659.2	659.8	0.7
N 2650	E 3300	661.1	659.3	659.8	0.5

TABLE 11
SUMMARY OF FSPSA SURVEY INFORMATION

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

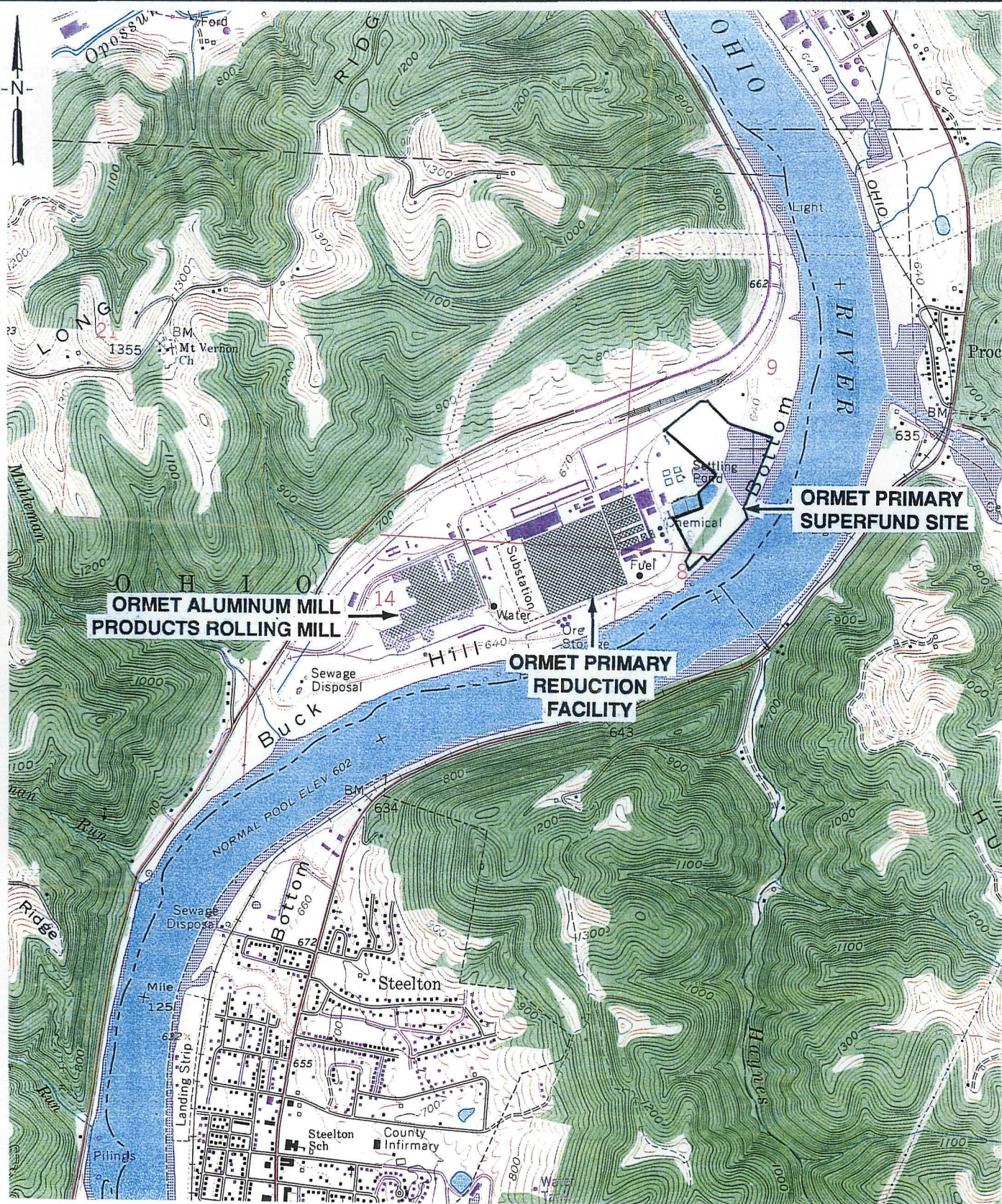
Northing	Easting	Pre-construction Elevation (feet, msl)	Elevation Following Regrading (feet, msl)	Elevation Following Cover Placement (feet, msl)	Cover Thickness (feet)
N 2700	E 2750	656.4	656.2	656.6	0.5
N 2700	E 2800	657.5	656.2	656.8	0.6
N 2700	E 2850	657.9	656.8	657.7	0.9
N 2700	E 2900	657.9	656.8	657.9	1.1
N 2700	E 2950	658.1	657.6	658.1	0.5
N 2700	E 3000	658.4	658.1	658.5	0.5
N 2700	E 3050	659.2	658.7	659.3	0.5
N 2700	E 3100	659.7	658.6	659.5	0.9
N 2700	E 3150	660.8	659.3	660.2	1.0
N 2700	E 3200	663.6	660.4	660.9	0.5
N 2700	E 3250	664.1	660.8	661.3	0.5
N 2700	E 3300	662.3	661.0	661.5	0.5
N 2750	E 2800	657.5	656.6	657.4	0.8
N 2750	E 2850	657.8	657.6	658.3	0.7
N 2750	E 2900	657.9	657.8	658.3	0.5
N 2750	E 2950	658.4	658.1	658.6	0.5
N 2750	E 3000	658.8	658.7	659.3	0.7
N 2750	E 3050	660.1	660.0	660.5	0.5
N 2750	E 3100	660.3	660.1	660.9	0.8
N 2750	E 3150	661.5	660.3	660.9	0.6
N 2750	E 3200	663.4	660.7	661.5	0.8
N 2750	E 3250	663.0	661.6	662.1	0.5
N 2750	E 3300	662.1	662.5	663.0	0.5
N 2800	E 2800	657.9	658.0	658.5	0.5
N 2800	E 2850	658.2	658.2	658.7	0.5
N 2800	E 2900	658.6	658.3	659.0	0.8
N 2800	E 2950	658.7	658.6	659.3	0.7
N 2800	E 3000	659.6	659.6	660.5	0.9
N 2800	E 3050	660.7	660.5	661.2	0.7
N 2800	E 3100	661.1	661.0	661.8	0.9
N 2800	E 3150	661.8	661.5	662.4	0.9
N 2800	E 3200	662.6	662.0	662.6	0.6
N 2800	E 3250	662.3	662.8	663.3	0.5
N 2800	E 3300	664.2	664.2	664.7	0.5

TABLE 11
SUMMARY OF FSPSA SURVEY INFORMATION

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Northing	Easting	Pre-construction Elevation (feet, msl)	Elevation Following Regrading (feet, msl)	Elevation Following Cover Placement (feet, msl)	Cover Thickness (feet)
N 2850	E 2850	658.2	658.2	658.8	0.6
N 2850	E 2900	657.9	658.6	659.2	0.6
N 2850	E 2950	659.0	659.2	659.7	0.5
N 2850	E 3000	659.8	660.6	661.1	0.5
N 2850	E 3050	661.5	661.3	661.8	0.5
N 2850	E 3100	662.2	662.0	662.6	0.6
N 2850	E 3150	662.8	662.7	663.4	0.7
N 2850	E 3200	662.8	662.7	663.2	0.5
N 2900	E 2850	658.6	658.4	658.9	0.5
N 2900	E 2900	658.9	658.5	659.2	0.7
N 2900	E 2950	659.3	659.3	659.8	0.5
N 2900	E 3000	660.3	660.5	661.0	0.5
N 2900	E 3050	662.2	661.7	662.2	0.5
N 2900	E 3100	662.2	662.3	662.8	0.5

Average Cover Thickness = 0.7



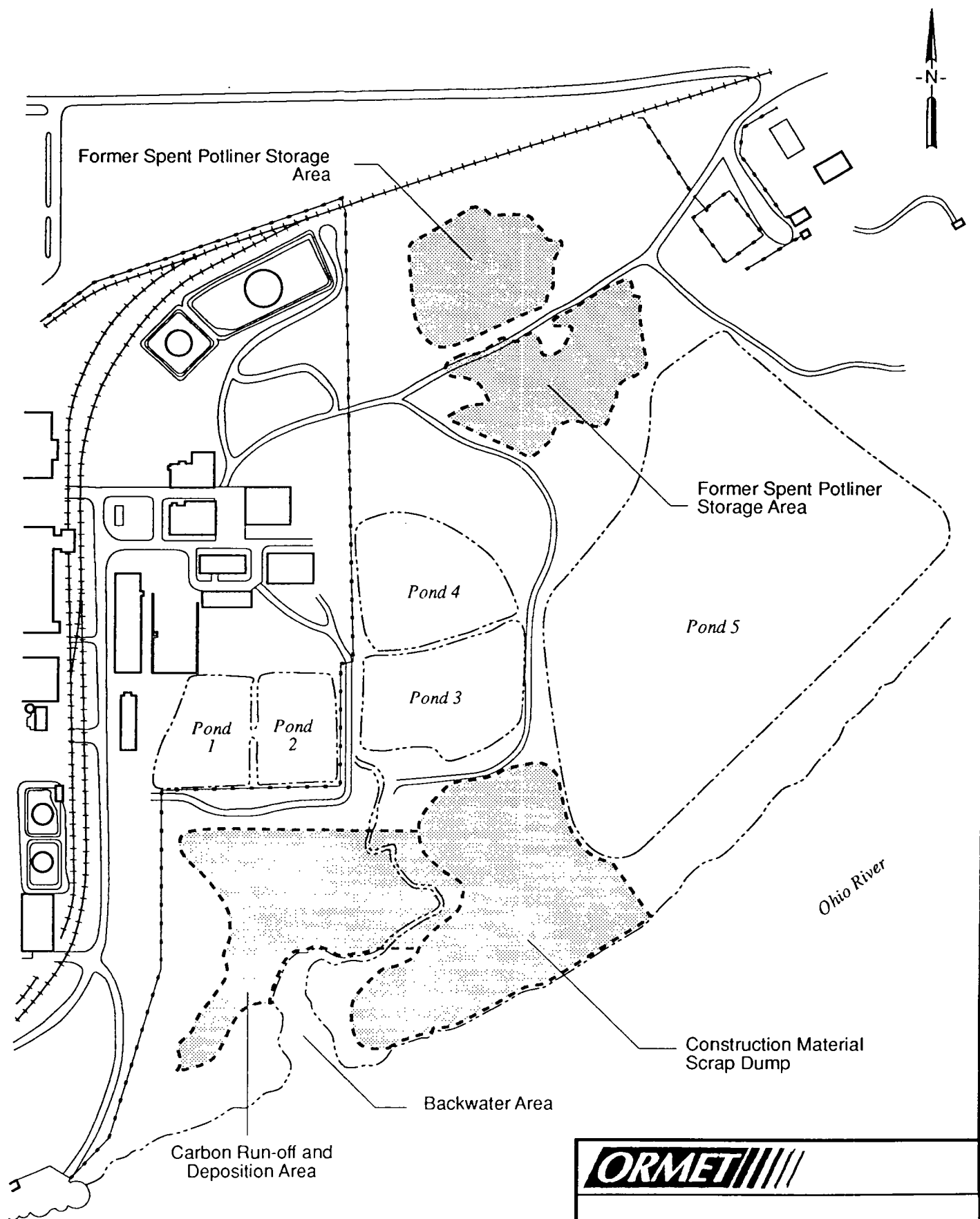
0 2000 4000
SCALE IN FEET



BASE MAP SOURCE: USGS 7 1/2 minute topographic quadrangle map New Martinsville, West Virginia-Ohio 1960, photorevised 1972 and 1976.

ORMET

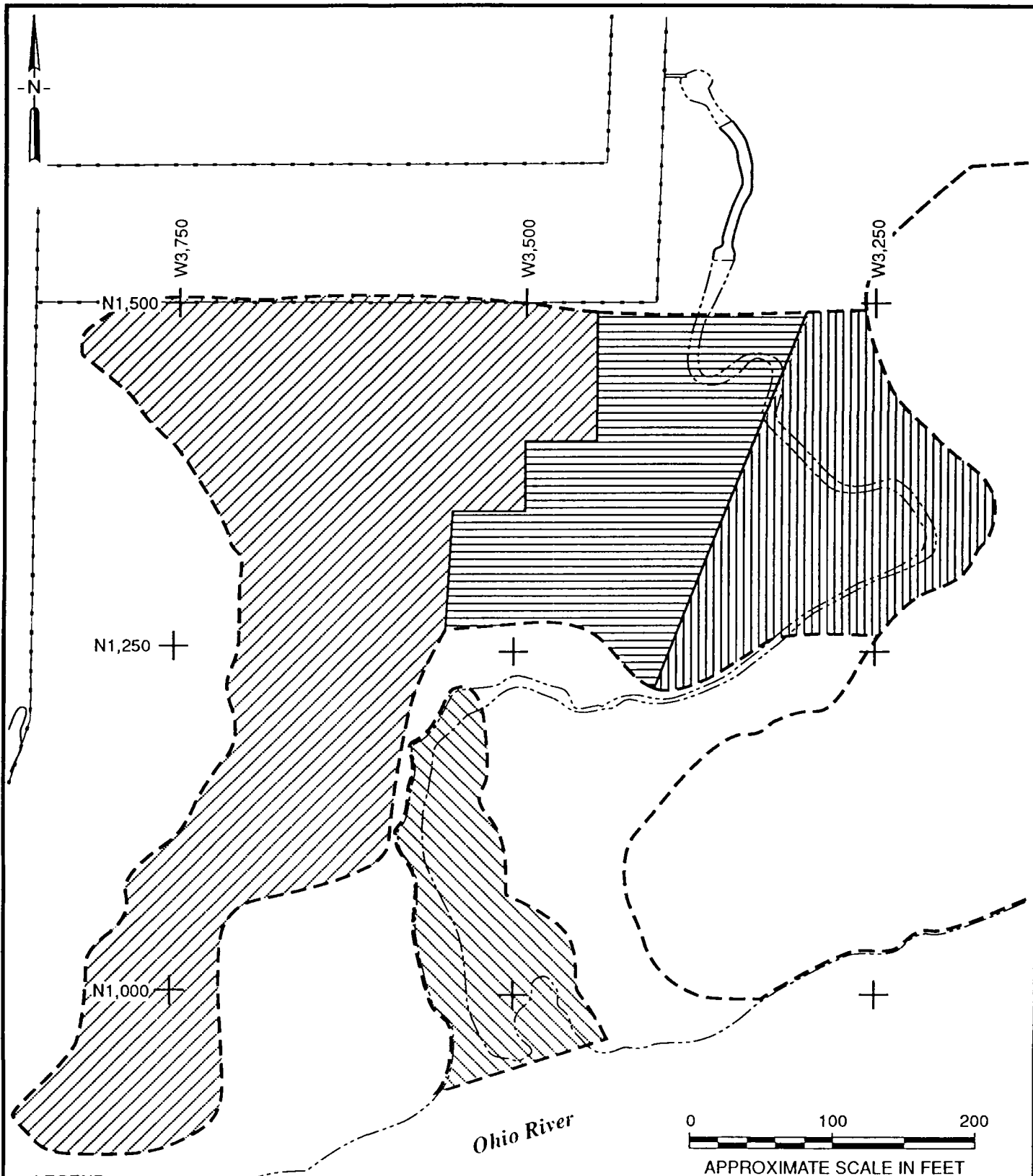
FIGURE 1
SITE VICINITY MAP



NOT TO SCALE

ORMET////

FIGURE 2
UNIT LOCATION MAP



LEGEND:

--- Approximate Unit Limit

--- Fence

+ N1,000 Plant Grid Coordinate

||||| CRDA Stage I (See Figure 2)

\\\\ CRDA Stage II (See Figures 3 and 4)

=== CRDA Stage III (See Figure 5)

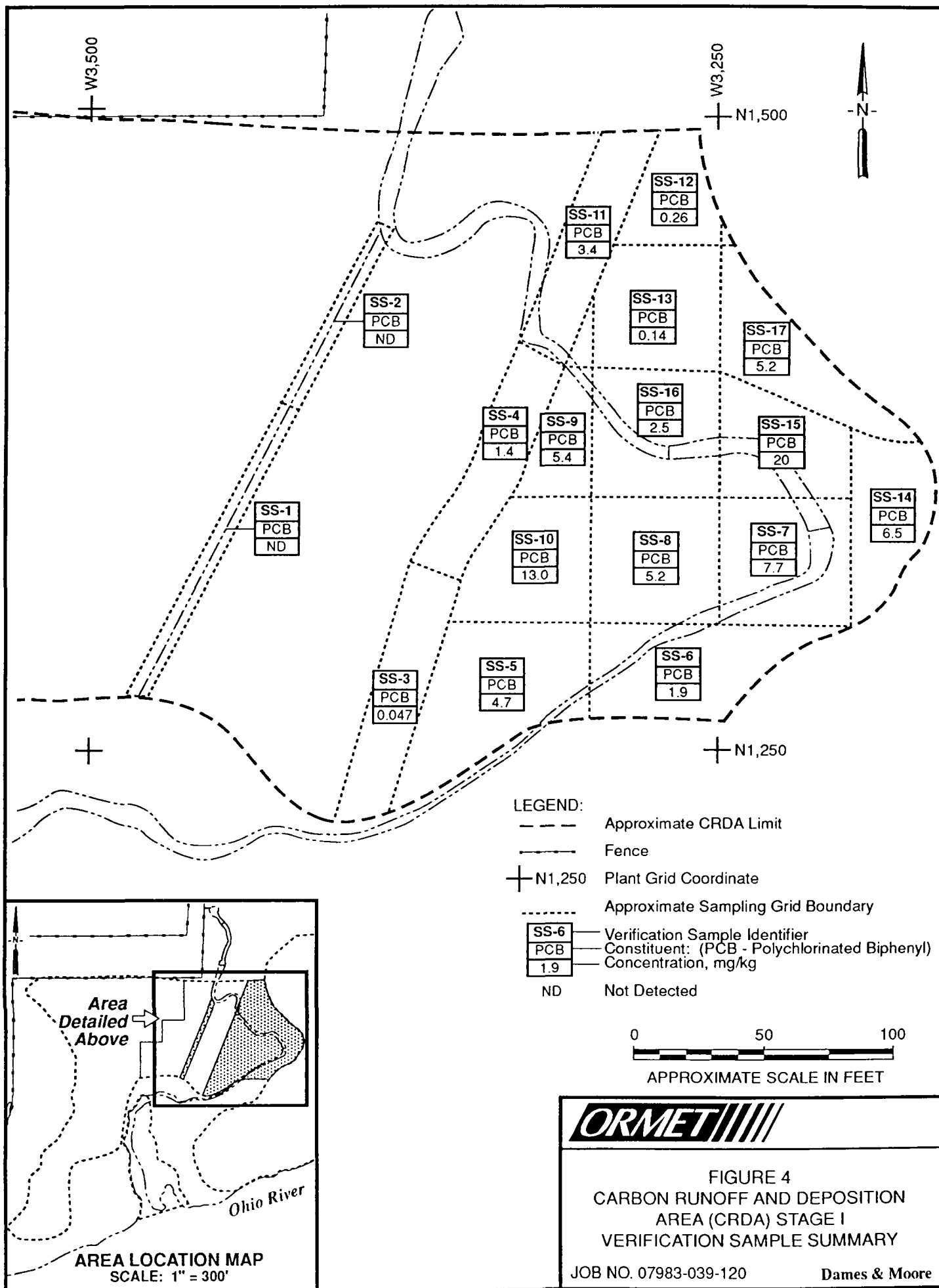
\\\\ Backwater Area (See Figure 6 and 7)

ORMET////

FIGURE 3
CARBON RUNOFF AND DEPOSITION
AREA (CRDA) AND BACKWATER AREA
SAMPLING LOCATION MAP

JOB NO. 07983-039-120

Dames & Moore



ORMET

FIGURE 4
CARBON RUNOFF AND DEPOSITION
AREA (CRDA) STAGE I
VERIFICATION SAMPLE SUMMARY

JOB NO. 07983-039-120

Dames & Moore

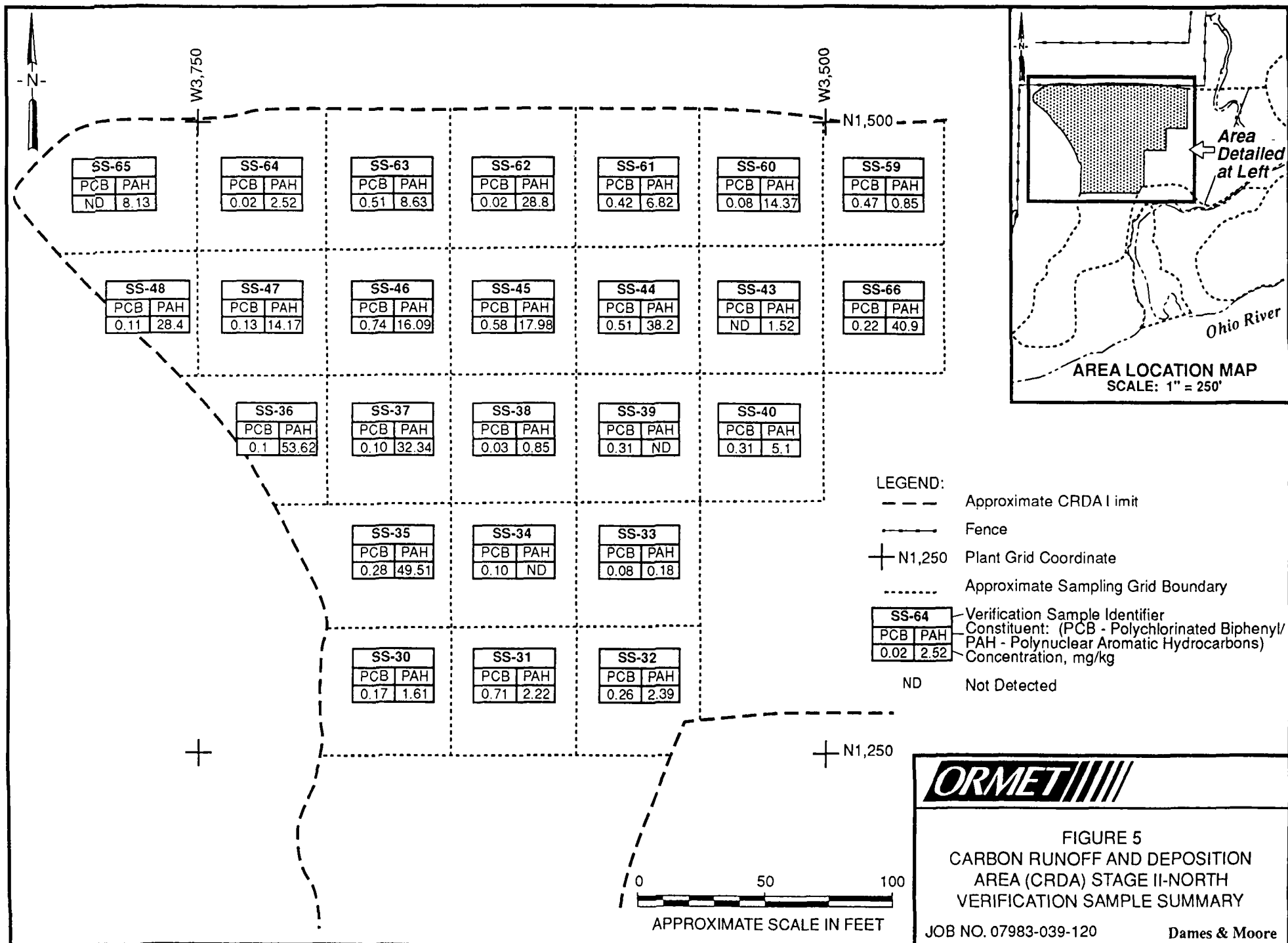
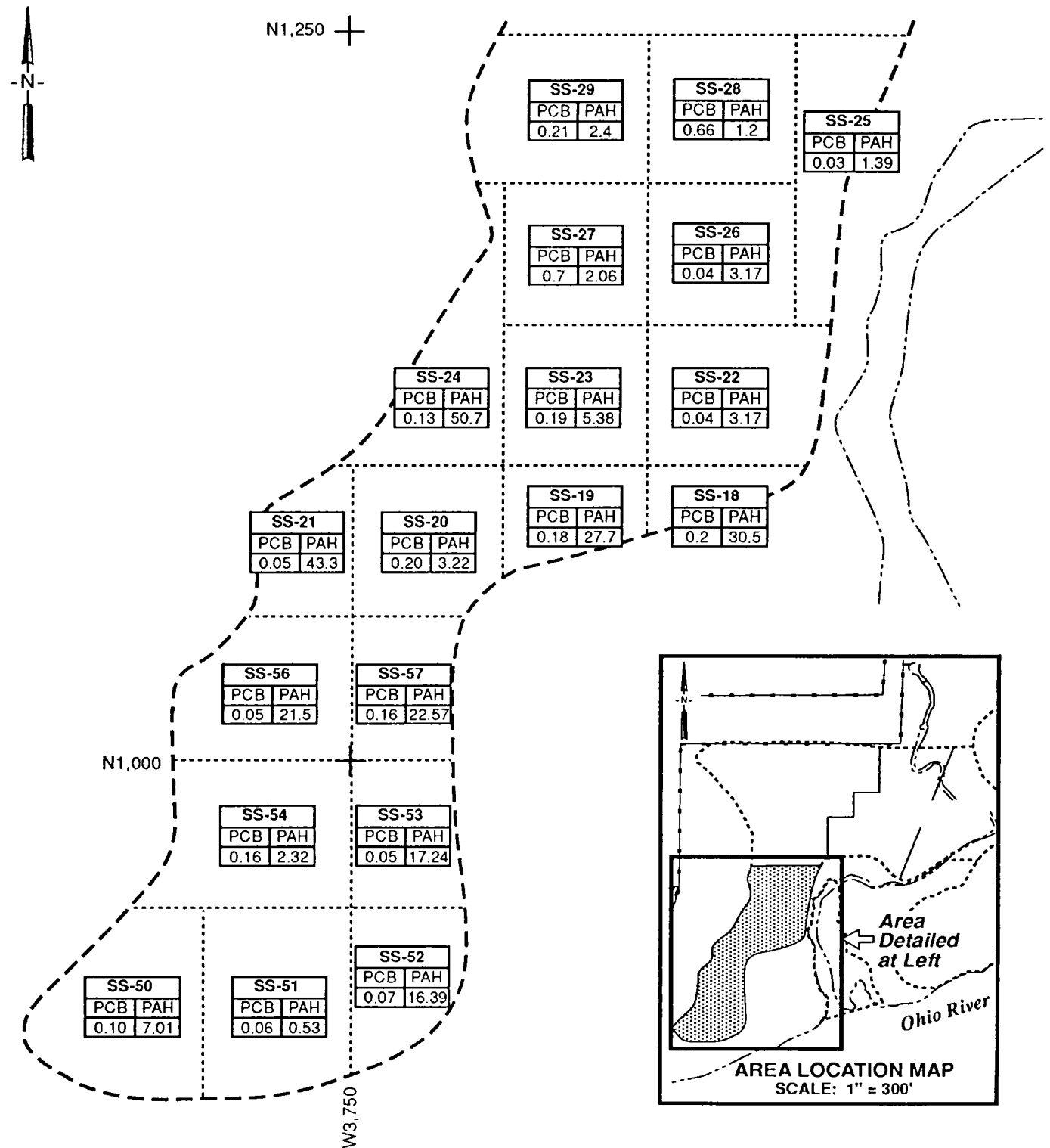

ORMET

FIGURE 5
CARBON RUNOFF AND DEPOSITION
AREA (CRDA) STAGE II-NORTH
VERIFICATION SAMPLE SUMMARY

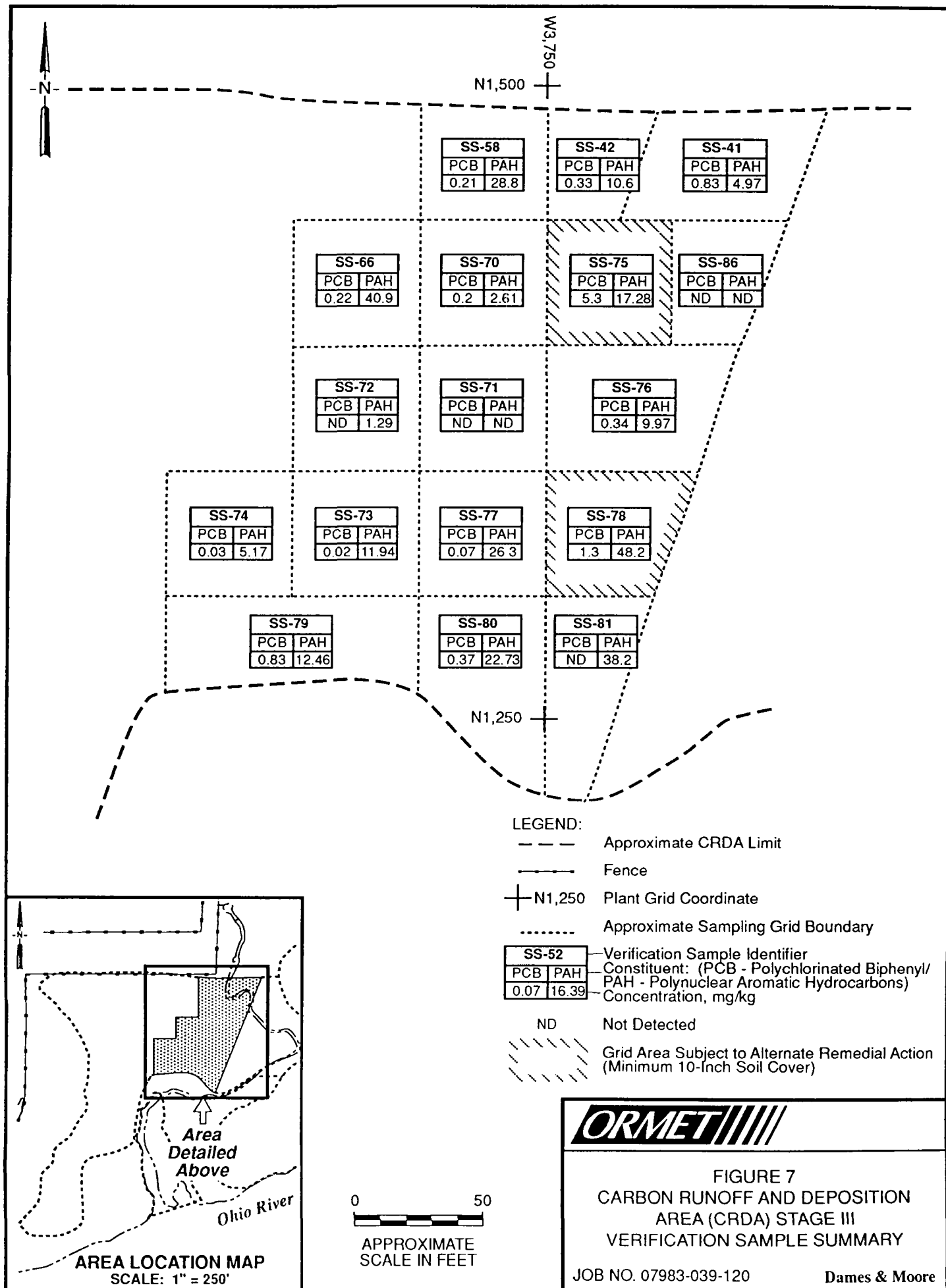
JOB NO. 07983-039-120

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ORMET

FIGURE 6
CARBON RUNOFF AND DEPOSITION
AREA (CRDA) STAGE II-SOUTH
VERIFICATION SAMPLE SUMMARY



ORMET

FIGURE 7
CARBON RUNOFF AND DEPOSITION
AREA (CRDA) STAGE III
VERIFICATION SAMPLE SUMMARY

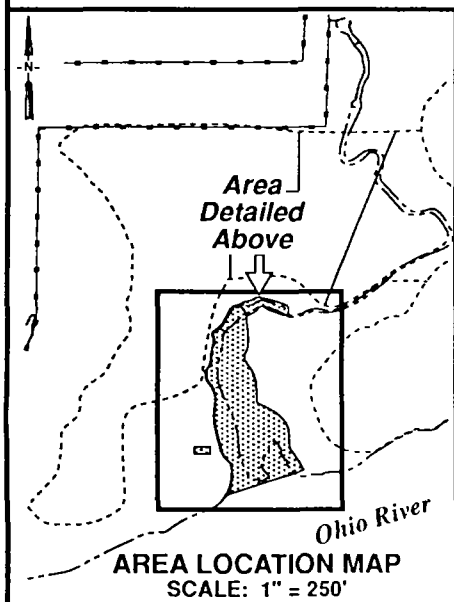
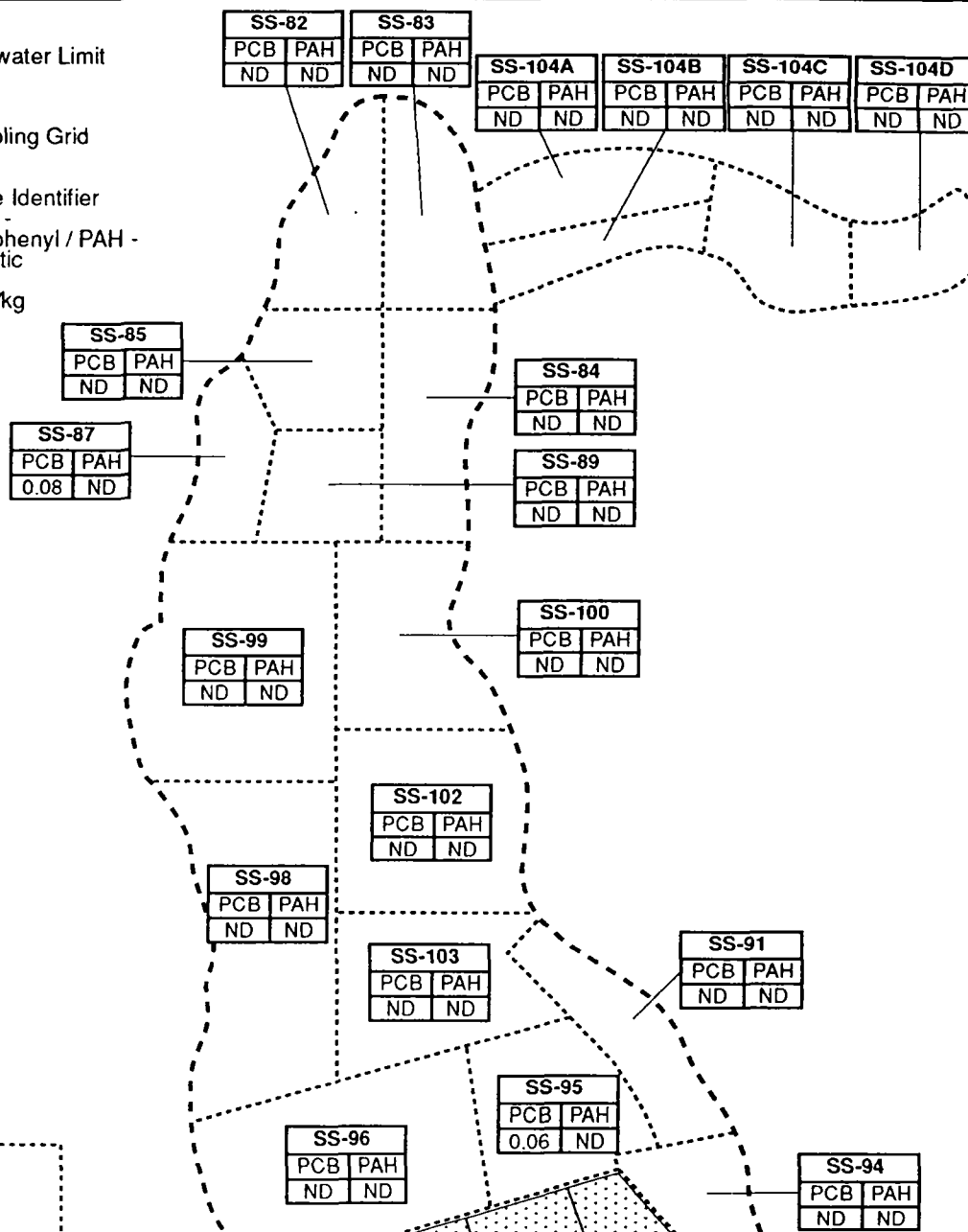
JOB NO. 07983-039-120

Dames & Moore

LEGEND:

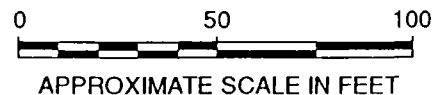
- Approximate Backwater Limit
- Fence
- - - - - Approximate Sampling Grid Boundary

SS-95		Verification Sample Identifier	
PCB	PAH	Constituent: (PCB - Polychlorinated Biphenyl / PAH - Polynuclear Aromatic Hydrocarbons)	
0.06	ND	Concentration, mg/kg	
ND		Not Detected	



Backwater Area Isolation Structure

Ohio River



ORMET

FIGURE 8
BACKWATER AREA EXCAVATION BASE
VERIFICATION SAMPLE SUMMARY

JOB NO. 07983-039-120

Dames & Moore

LEGEND:

- Approximate Backwater Limit
- Fence
- Approximate Sampling Grid Boundary

SS-90	
PCB	PAH
0.04	ND

Verification Sample Identifier
 Constituent: (PCB - Polychlorinated
 Biphenyl / PAH - Polynuclear Aromatic
 Hydrocarbons)
 Concentration, mg/kg

ND Not Detected

SS-88	
PCB	PAH
ND	ND

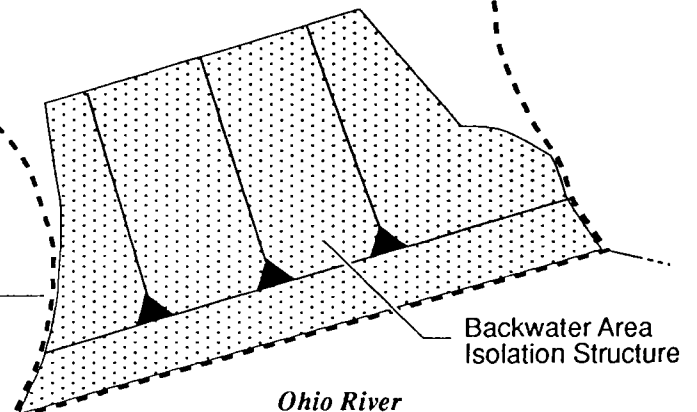
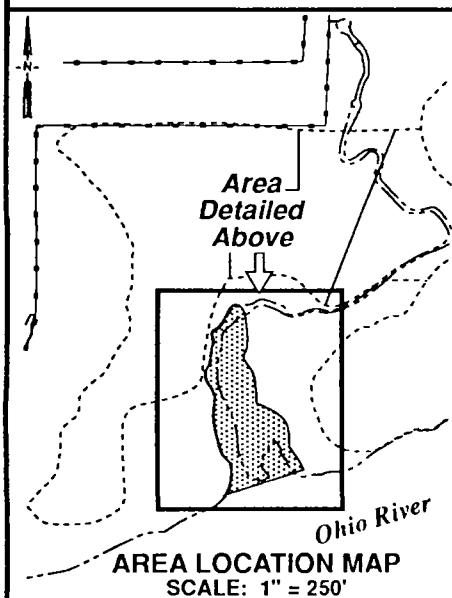
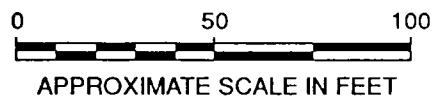
SS-97	
PCB	PAH
ND	ND

SS-93	
PCB	PAH
ND	ND

SS-92	
PCB	PAH
ND	ND

SS-101	
PCB	PAH
ND	ND

SS-90	
PCB	PAH
0.04	ND



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FIGURE 9
 BACKWATER AREA SIDEWALL
 VERIFICATION SAMPLE SUMMARY

JOB NO. 07983-039-120

Dames & Moore

APPENDIX A

SOILS TESTING RESULTS AND DOCUMENTATION

DRAINAGE MATERIAL TESTING RESULTS

REPORT OF LABORATORY TESTING OF GRANULAR SOILS

TESTED FOR: O'BRIEN & GERE TECHNICAL
SERVICES, INC.
5000 BRITTONFIELD PARKWAY
P.O. BOX 5240
SYRACUSE, NY 13057
ATTN: TONY GEISS

PROJECT: ORMET PRIMARY ALUMINUM CORP.
SUPERFUND SITE
HANNIBAL, OHIO

DATE: JUNE 2, 1997

OUR REPORT NO.: 130-70040-18

Lab No.: 130-7046

Sample Description: Pea Gravel

Sample Source: Grimes Pit - Grandview, Ohio

Date Sampled: May 15, 1997

Sieve	% Passing
1/2"	100
3/8"	89
No. 4	8
No. 8	0
No. 16	0
No. 30	0
No. 50	0
No. 100	0
No. 200	0
Median Particle Size	0.266 in.
Minimum Relative Density (ASTM D-4254)	95.7 PCF
Maximum Relative Density (ASTM D-4253)	103.8 PCF (WET METHOD) 102.0 PCF (DRY METHOD)
Coefficient of Permeability (ASTM D-2434)	5.8×10^{-2} cm/sec (Remolded to 50% Relative Density)

Respectfully submitted,
PROFESSIONAL SERVICE INDUSTRIES, INC.

Information To Build On

FSPSA COVER MATERIAL TESTING RESULTS

REPORT OF LABORATORY TESTING OF GRANULAR SOILS

TESTED FOR: O'BRIEN & GERE TECHNICAL
SERVICES, INC.
5000 BRITTONFIELD PARKWAY
P.O. BOX 5240
SYRACUSE, NY 13057
ATTN: TONY GEISS

PROJECT: ORMET PRIMARY ALUMINUM CC
SUPERFUND SITE
HANNIBAL, OHIO

DATE: SEPTEMBER 11, 1997

OUR REPORT NO.: 130-70040-46

Lab No.: 130-7108

Sample Description: Brown, Fine to Coarse, SAND

Sample Source: Brown's Gravel Pit - Sardis, OH
West side of pit excavation

Test Method: ASTM D-243

Date Sampled: September 3, 1997

Dry Density: 107.0 pcf

Void Ratio: 0.544

Relative Density: 50%

Specimen Height: 7.325 cm

Specimen Diameter: 6.332 cm

Specific Gravity: 2.65 (assumed)

Specimen Area: 31.49 cm²

TRIAL NO.	HEAD (cm)	FLOW, Q (cm ³)	TIME (sec)	TEMP (°C)	R ₁	COEFFICIENT OF PERMEABILITY (cm/sec)
1	10.16	108.67	360	24	0.91	6.3 x 10 ⁻³
2	10.16	107.89	360	24	0.91	6.3 x 10 ⁻³
3	10.16	108.05	360	24	0.91	6.3 x 10 ⁻³
4	10.16	108.10	360	24	0.91	6.3 x 10 ⁻³
5	10.16	126.65	420	24	0.91	6.3 x 10 ⁻³
6	10.16	107.81	360	24	0.91	6.2 x 10 ⁻³
					AVERAGE:	6.3 x 10 ⁻³

Respectfully submitted,
PROFESSIONAL SERVICE INDUSTRIES, INC.

Information To Build On

ROUTE 7 BORROW AREA TESTING RESULTS

May 21, 1997

O'Brien & Gere Technical Services, Inc.
5000 Brittonfield Parkway
P.O. Box 5240
Syracuse, NY 13057
Attn: Mr. Anthony Geiss

Re: Preliminary Evaluation of Proposed Borrow Materials
Ormet Primary Aluminum Corporation
Superfund Site
Hannibal, OH
PSI Project No. 130-70040

Dear Mr. Geiss:

In accordance with the Construction Quality Assurance Project Plan, Professional Service Industries, Inc. (PSI) has performed an evaluation of borrow materials proposed for the reference project.

Borrow material sampling and testing has been performed in accordance with Table 5 of the Construction Quality Assurance Project Plan for evaluation of suitability for use as specified in Section 02200, Items 2.02 and 2.03 of Technical Specifications for the project. Brief commentary and conclusions regarding use of the proposed borrow materials in relation to Part II is provided as follows.

I. SILTY CLAY FILL MATERIAL, Section 02200-2.02

Silty Clay Fill Materials are required by the project specifications to consist of natural soils having a maximum permeability of 1×10^{-5} cm/sec. Materials sampled from the New Cast House Site (NCHS), the Railroad Track Site (RRTS), and the Route 7 Site (RT7S) meet the project specifications for permeability.

II. FINE-GRAINED SUBGRADE MATERIAL, Section 02200-2.03

Fine-Grained Subgrade Materials are required by the project specifications to consist of fine-grained, natural soils which shall be predominantly less than 1/4 inch and have a maximum particle size of 1/2 inch. Materials sampled from the New Cast House Site, the Railroad Track Site, and the Route 7 Site are natural silty clays, sandy silts, and silty sands. Grain-size analysis test results performed on the materials sampled indicate percentages finer than 1/4 inch to vary between 75 and

Information To Build On

PSI Project No. 130-70040
May 21, 1997
Page 2

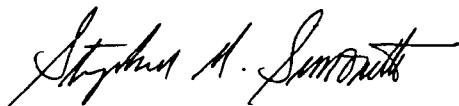
90 percent at the New Cast House and Railroad Track Sites and between approximately 79 and 95 percent at the Route 7 site. Use of the materials as Fine-Grained Subgrade Material will require screening to removed particles greater than 1/2 inch.

Results of grain-size analyses, moisture density relationship, relative density, liquid and plastic limits, and permeability tests required to evaluate the proposed borrow materials are provided on the attached summary table.

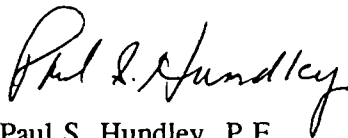
Testing of materials proposed for 02200 Items 2.04 and 2.06 (Drainage and FSPSA Soil Cover Materials) is in progress, and, upon completion, a final summary letter and all test results will be provided.

Please contact us if there are any questions regarding the information provided herein.

Very truly yours,
PROFESSIONAL SERVICE INDUSTRIES, INC.



Stephen M. Simonette
Branch Manager



Paul S. Hundley, P.E.
District Manager



SMS:PSH/tlg

Attachment: Summary of Laboratory Test Results

**SUMMARY OF LABORATORY TEST RESULTS
ORMET SUPERFUND LANDFILL PROJECT
HANNIBAL, OHIO**

SAMPLE IDENTIFICATION	Railroad Track Site Location A	New Cast House Site Location A	Route 7 Borrow Site Location A
SAMPLE DEPTH	30" Below Grade	24" Below Grade	38" Below Grade
Gravel (%)	6.7	14.5	7.5
Sand (%)	36.6	52.7	16.4
Silt (%)	35.1	15.4	37.0
Clay (%)	21.6	17.4	39.1
Median Particle Size (in.)	0.002	0.012	0.039
Liquid Limit (%)	—	—	38
Plasticity Index (%)	NP	NP	17
Maximum Lab Dry Density (pcf)	118.5	115.5	113.5
Optimum Moisture Content (%)	11.5	14.0	15.5
Permeability (cm/sec)	2.7E-07	8.1E-08	3.4E-08

Project Material Specifications

SPECIFICATION SECTION	CLASSIFICATION	GRADING	PERMEABILITY
02200-2.02	Silty Clay Fill	natural soils	1.0E-05 cm/sec maximum
02200-2.03	Fine-Grained Subgrade	1/2 maximum predominantly < 1/4 inch	N/A
02200-2.04	CMSD Cover TSCA LDGMI/LCS **	sand* and/or gravel 1 in. max., 0.125 in. min. med.	1.0E-02 cm/sec minimum 1.0E-02 cm/sec minimum
02200-2.05	Vegetative Soil Material	natural soils free of roots, stumps, branches, debris	N/A
02200-2.06	FSPSA Soil Cover	minimum 25% silt	1.0E-03 to 1.0E-05 cm/sec

* washed or crushed sand

** rounded, washed gravel

Professional Service Industries, Inc.

850 Poplar Street, Pittsburgh, PA 15220 (412) 922-4000

Project Number: 130-70040 -9

Project Name: ORMET PRIMARY ALUMINUM

Client: O'BRIEN & GERE

PERMEABILITY TEST REPORT**SAMPLE DATA**

Boring Number: 1, 38" BELOW GRADE		Source: NORTH OF ROUTE 7 SITE	
Sample Description: LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS, BROWN			
Sample Type:	BULK	LL: 38	%<#200: 76.1
Sample Condition:	REMOLED	PI: 17	Specific Gravity: 2.70
	INITIAL	FINAL	Specification: ASTM D 5084
Height (in):	3.283	3.297	Test Type: Falling Head
Diameter (in):	2.873	2.895	with Rising Tailwater
Weight (g):	691.18	732.24	Confining pressure: 2.0 psi
Wet Density (pcf):	123.7	128.6	Initial Porosity: 0.371
Moisture Content:	16.8	22.2	Initial Dial Rdng.: 0.000 in
Dry Density (pcf):	105.9	105.2	Dial after Sat.: 0.003 in
Percent Saturation:	77	100	Change in Ht.: 0.003 in
Void Ratio:	0.590	0.602	Corrected Ht.: 3.280 in

TEST DATA

Determination No.:		1	2	3	4
Lower Burette	Pressure (psi)	90.0	90.0	90.0	90.0
	Initial Reading	4.5	5.0	5.9	8.0
	Final Reading	5.0	5.9	8.0	8.6
Upper Burette	Pressure (psi)	86.5	86.5	86.5	86.5
	Initial Reading	19.6	19.1	18.0	15.9
	Final Reading	19.1	18.0	15.9	15.2
Elapsed Time (sec)		12600	23100	50400	16200
Temperature(C)		22.5	23.0	24.0	24.0
Ratio Flow In/Flow Out		1.00	0.82	1.00	0.86
Initial Gradient		31.6	31.5	31.2	30.6
Final Gradient		31.5	31.2	30.6	30.5
Coefficient of Permeability (k), (cm/sec)		2.8E-08	3.0E-08	2.9E-08	2.8E-08

Average Coefficient of Permeability(cm/sec):

2.9E-08

Project Number: 130- 70040-27
 Project Name: ORMET PRIMARY ALUMINIUM
 Client: O'BRIEN & GERE

Professional Service Industries, Inc
 8501 Maple Street, Pittsburgh, PA 15220 (412) 722-1000

PERMEABILITY TEST REPORT

SAMPLE DATA									
Boring Number: 1A, 60" BELOW GRADE				Source: NORTH OF ROUTE 7 SITE					
Sample Description: SANDY LEAN CLAY, TRACE ROCK FRAGMENTS, BROWN									
Sample Type: BULK		LL: 40		% < #200: 66.6					
Sample Condition: REMOLDED		PI: 20		Specific Gravity: 2.72					
INITIAL		FINAL		Specification: ASTM D 5084					
Height (in):		3.132		3.132		Test Type: Falling Head			
Diameter (in):		2.874		2.874		with Rising Tailwater			
Weight (g):		668.24		Confining pressure:		2.0 psi			
Wet Density (pcf):		125.3		0.0		Initial Porosity:		0.371	
Moisture Content:		17.4		Initial Dial Rdnng.:		0.000 in			
Dry Density (pcf):		106.7		0.0		Dial after Sat.:		0.000 in	
Percent Saturation:		80		0		Change in Ht.:		0.000 in	
Void Ratio:		0.590		ERR		Corrected Ht.:		3.132 in	
TEST DATA									
Determination No.:		1		2		3		4	
Lower Burette	Pressure (psi)	80.0		80.0		80.0		80.0	
	Initial Reading	3.0		4.0		4.4		5.6	
	Final Reading	4.0		4.4		5.6		11.2	
Upper Burette	Pressure (psi)	76.6		76.6		76.6		76.6	
	Initial Reading	19.7		18.7		18.3		17.2	
	Final Reading	18.7		18.3		17.2		11.5	
Elapsed Time (sec)		6060		2880		7980		46920	
Temperature (C)		21.0		21.0		21.0		21.0	
Ratio Flow In/Flow Out		1.00		1.00		1.09		0.98	
Initial Gradient		32.4		32.2		32.1		31.7	
Final Gradient		32.2		32.1		31.7		30.1	
Coefficient of Permeability (k), (cm/sec)		1.2E-07		1.0E-07		1.1E-07		9.1E-08	
Average Coefficient of Permeability (cm/sec):				1.0E-07					

Project Number: 130-70040-11

Project Name: ORMET PRIMARY ALUMINUM

Client: O'BRIEN & GERE

Professional Service Industries, Inc.

850 Poplar Street, Pittsburgh, PA 15220 (412) 922-1000

PERMEABILITY TEST REPORT

SAMPLE DATA					
Boring Number: B, 62" BELOW GRADE			Source: NORTH OF ROUTE 7 SITE		
Sample Description: LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS, BROWN					
Sample Type	BULK	LL: 30	% < #200: 70.5		
Sample Condition	REMOLED	PI: 10	Specific Gravity: 2.68		
	INITIAL	FINAL	Specification: ASTM D 5084		
Height (in):	3.084	3.092	Test Type: Falling Head		
Diameter (in):	2.874	2.874	with Rising Tailwater		
Weight (g):	662.98	688.76	Confining pressure:	2.0 psi	
Wet Density (pcf):	126.3	130.8	Initial Porosity:	0.347	
Moisture Content:	15.6	20.4	Initial Dial Reading:	in	
Dry Density (pcf):	109.2	108.7	Dial after Sat.:	0.000 in	
Percent Saturation:	79	101	Change in Ht.:	0.000 in	
Void Ratio:	0.531	0.539	Corrected Ht.:	3.084 in	
TEST DATA					
	Determination No.:	1	2	3	4
Lower Burette	Pressure (psi)	80.0	80.0	80.0	80.0
	Initial Reading	6.2	7.9	10.4	19.6
	Final Reading	7.9	10.4	19.6	22.5
Upper Burette	Pressure (psi)	76.7	76.7	76.7	76.7
	Initial Reading	17.5	15.8	13.2	4.1
	Final Reading	15.8	13.2	4.1	1.0
	Elapsed Time (sec)	2100	3120	11940	4020
	Temperature (C)	21.0	21.0	21.0	21.0
	Ratio Flow In/Flow Out	1.00	0.96	1.01	0.94
	Initial Gradient	31.3	30.8	30.1	27.5
	Final Gradient	30.8	30.1	27.5	26.6
Coefficient of Permeability (k), (cm/sec)		6.1E-07	6.3E-07	6.2E-07	6.5E-07
Average Coefficient of Permeability (cm/sec):		6.3E-07			

JUL 16 '97 13:00 FR PSI-CHEMIST

112 922 4040 TO 13042869653-8:12 P.35 05

JUL 16 '97 03:01 PM

Project Number: 130-70040-12

Project Name: ORMET PRIMARY ALUMINUM

Client: O'BRIEN & GERE

Professional Service Industries, Inc.

550 Poplar Street, Parkersburg, PA 15220 (717) 922-1000

PERMEABILITY TEST REPORT

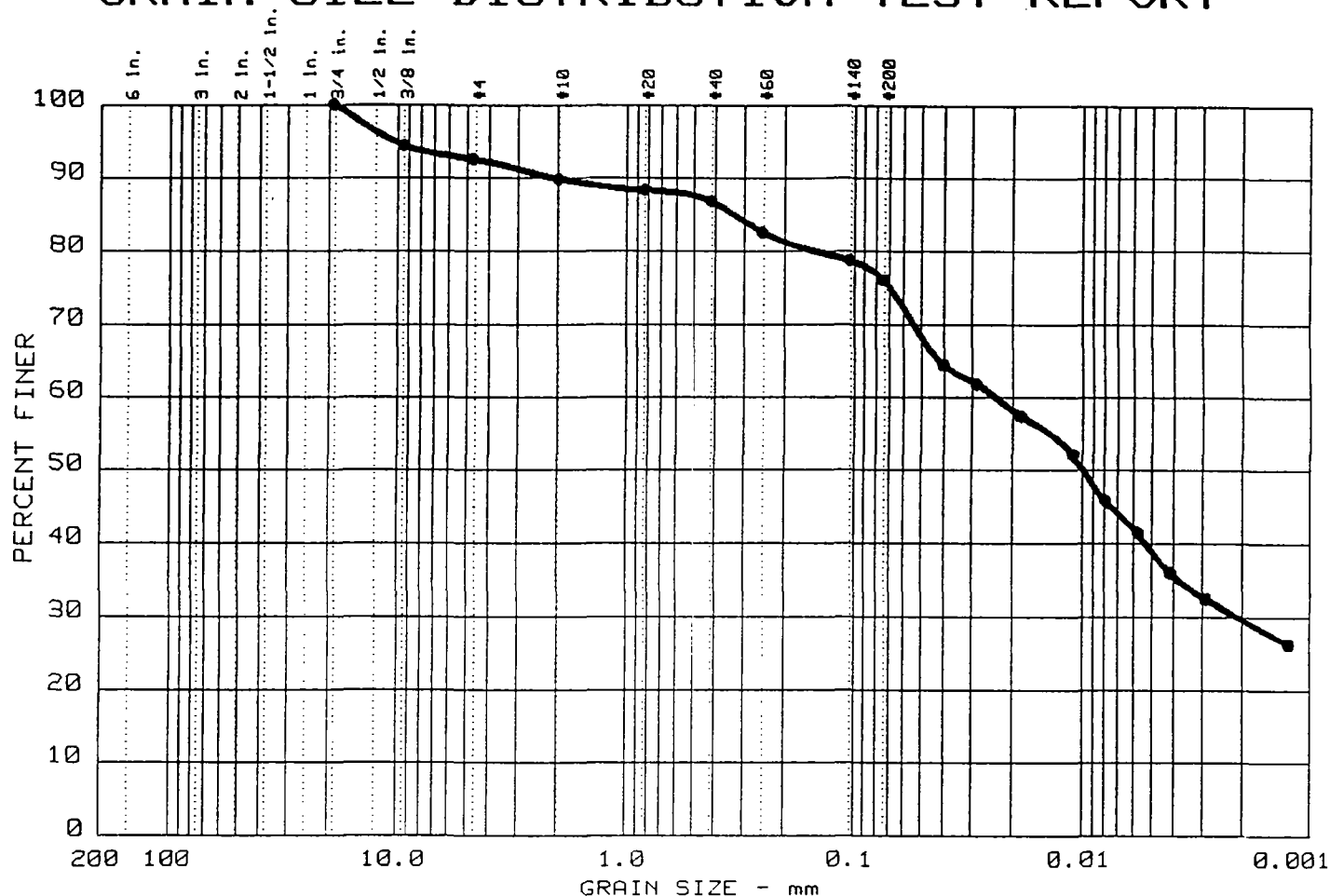
SAMPLE DATA

Boring Number: C, 48" BELOW GRADE		Source: NORTH OF ROUTE 7 SITE	
Sample Description: LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS, BROWN			
Sample Type:	BULK	LL: 30	% < #200: 78.9
Sample Condition:	REMOLED	PI: 11	Specific Gravity: 2.67
	INITIAL	FINAL	
Height (in):	3.237	3.269	Specification: ASTM D 5084
Diameter (in):	2.874	2.880	Test Type: Falling Head
Weight (g):	684.29	724.50	with Rising Tailwater
Wet Density (pcf):	124.2	129.6	Confining pressure: 2.0 psi
Moisture Content:	17.0	21.4	Initial Porosity: 0.363
Dry Density (pcf):	106.1	106.8	Initial Dial Rdg.: 0.000 in
Percent Saturation:	80	102	Dial after Sat.: 0.000 in
Void Ratio:	0.570	0.560	Change in Ht.: 0.000 in
			Corrected Ht.: 3.237 in

TEST DATA

Determination No.:		1	2	3	4
Lower Burette	Pressure (psi)	80.0	80.0	80.0	80.0
	Initial Reading	2.4	6.1	10.2	11.8
	Final Reading	6.1	10.2	11.8	16.4
Upper Burette	Pressure (psi)	76.5	76.5	76.5	76.5
	Initial Reading	20.7	16.8	12.6	11.0
	Final Reading	16.8	12.6	11.0	6.2
Elapsed Time (sec)		7280	8520	3480	10620
Temperature (C)		21.0	21.0	21.0	21.0
Ratio Flow In/Flow Out		0.95	0.98	1.00	0.98
Initial Gradient		32.5	31.4	30.3	29.9
Final Gradient		31.4	30.3	29.9	28.6
Coefficient of Permeability (k), (cm/sec)		3.8E-07	3.7E-07	3.6E-07	3.5E-07
Average Coefficient of Permeability (cm/sec):		3.6E-07			

GRAIN SIZE DISTRIBUTION TEST REPORT



PROCTOR TEST REPORT

Curve No.:

Project No.: 130-70040-9

Date: 4-25-97

Project: ORMET PRIMARY ALUMINUM

Location: 1, NORTH OF RT. 7 SITE

Elev/Depth: 38"

Remarks:

RAMMER TYPE: MANUAL PREP. METHOD: MOIST

MATERIAL DESCRIPTION

Description: LEAN CLAY WITH SAND, TRACE ROCK FRAG., BROWN

Classifications: USCS: CL

AASHTO: A-6(12)

Nat. Moist. = %

Sp.G. = --

Liquid Limit = 38

Plasticity Index = 17

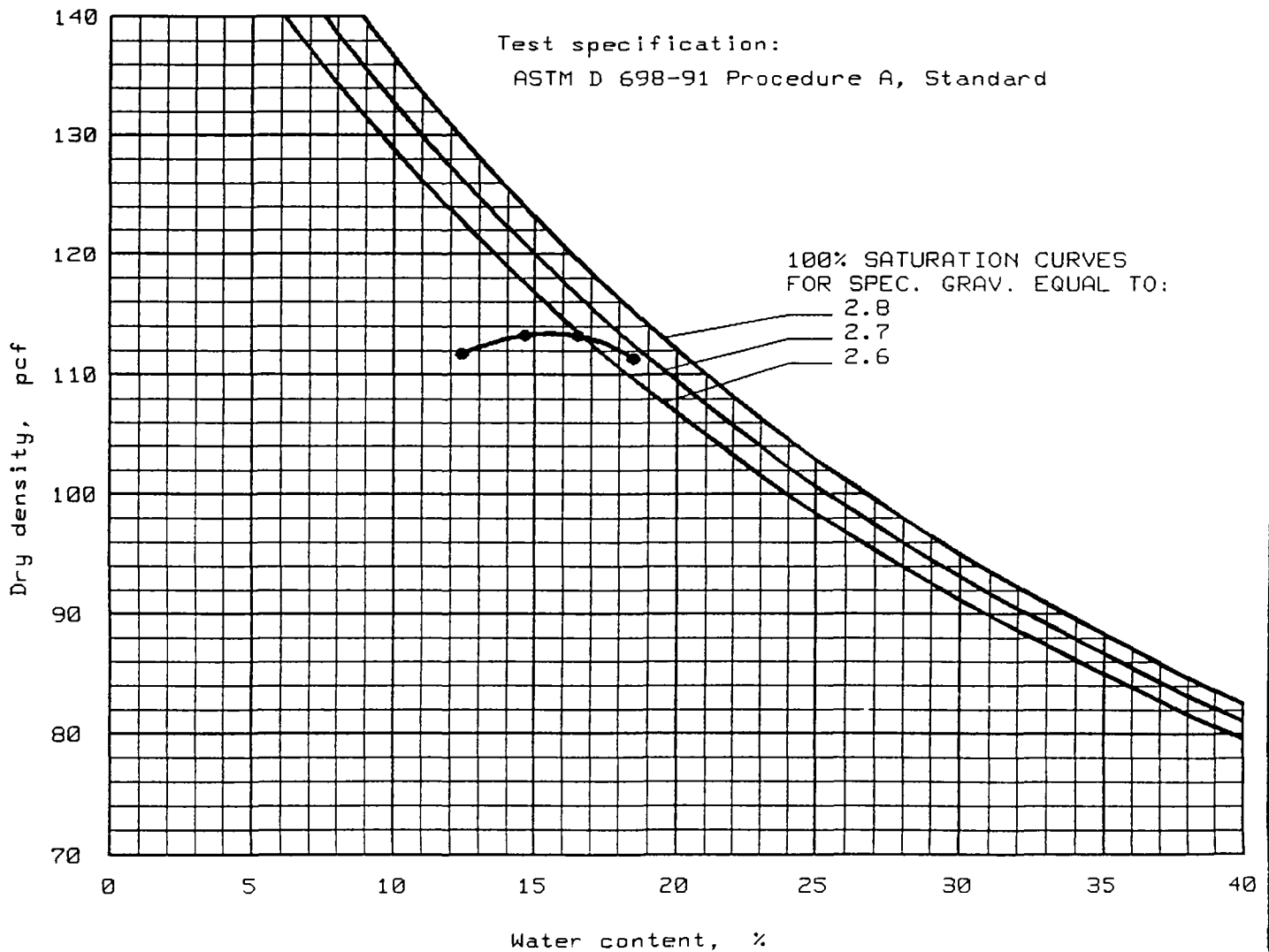
% > No. 4 = 7.5%

% < No. 200 = 76.1%

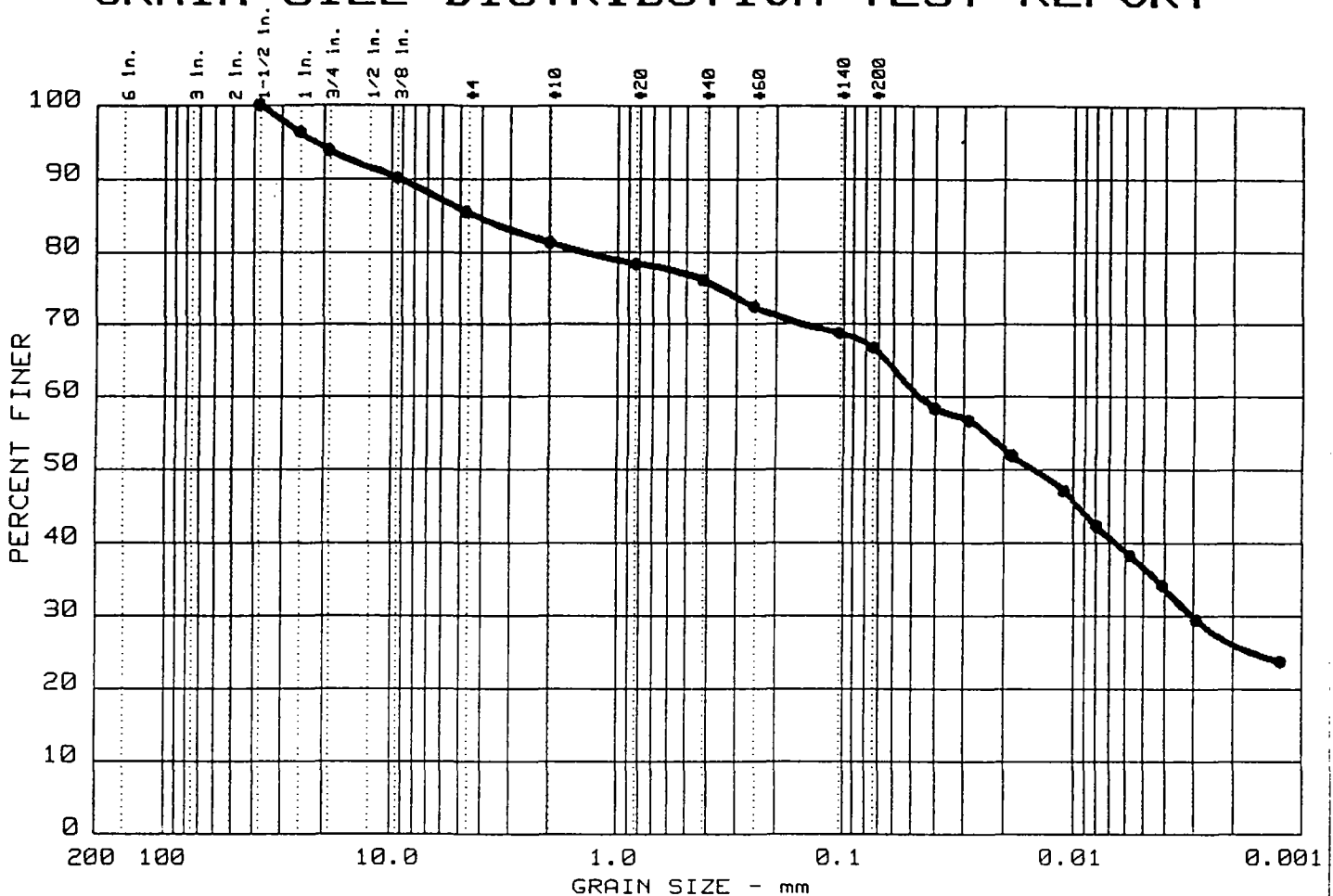
TEST RESULTS

Maximum dry density = 113.5 pcf

Optimum moisture = 15.5 %



GRAIN SIZE DISTRIBUTION TEST REPORT



PROCTOR TEST REPORT

Curve No.:

Project No.: 130-70040-10

Date: 4-28-97

Project: ORMET PRIMARY ALUMINUM

Location: 1A, NORTH OF RT. 7 SITE

Elev/Depth: 60"

Remarks:

RAMMER TYPE: MANUAL PREP. METHOD: MOIST

MATERIAL DESCRIPTION

Description: SANDY LEAN CLAY, TRACE ROCK FRAGMENTS, BROWN

Classifications: USCS: CL

AASHTO: A-6(12)

Nat. Moist. = %

Sp.G. = --

Liquid Limit = 40

Plasticity Index = 20

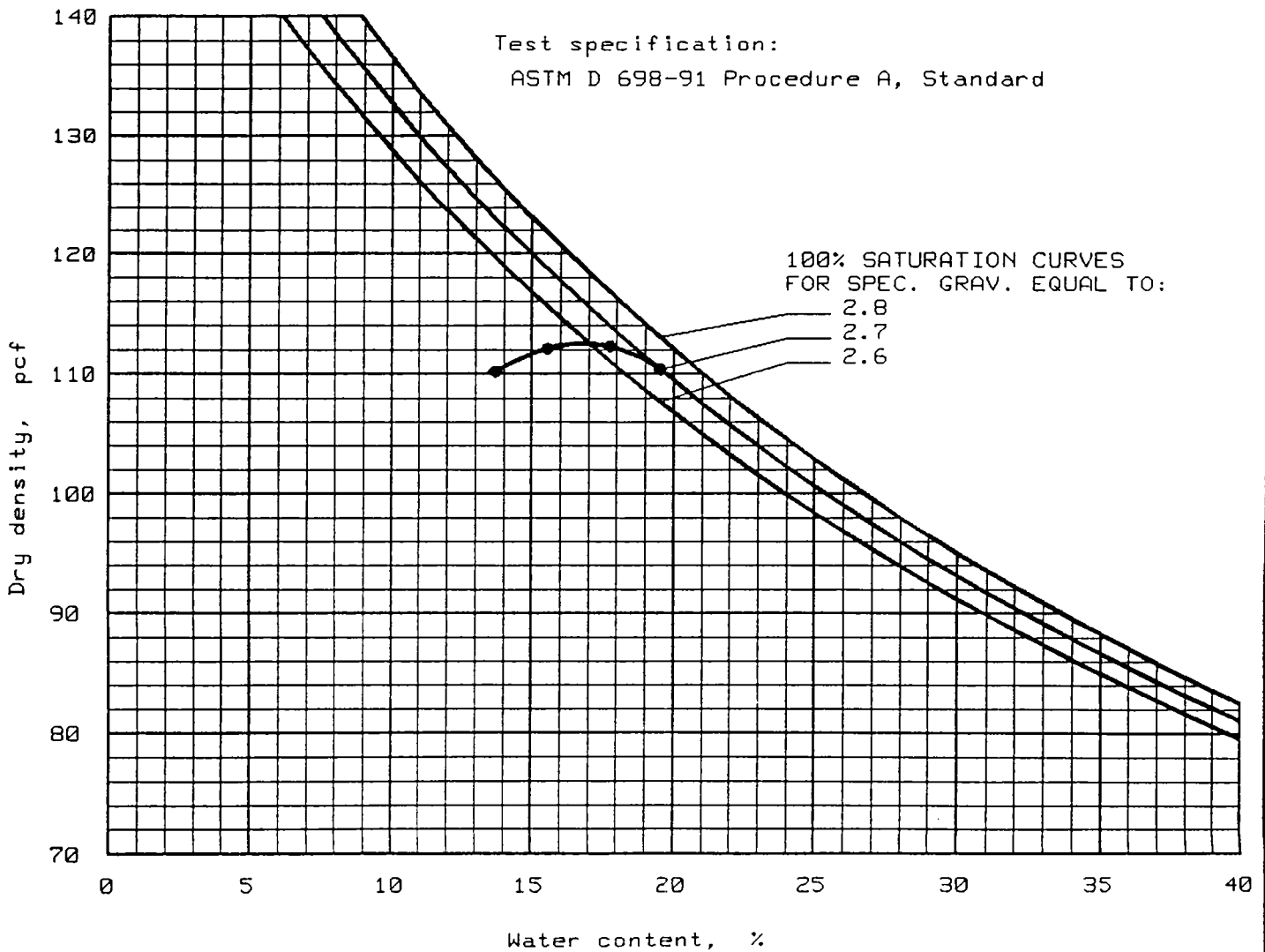
% > No. 4 = 14.5%

% < No. 200 = 66.6%

TEST RESULTS

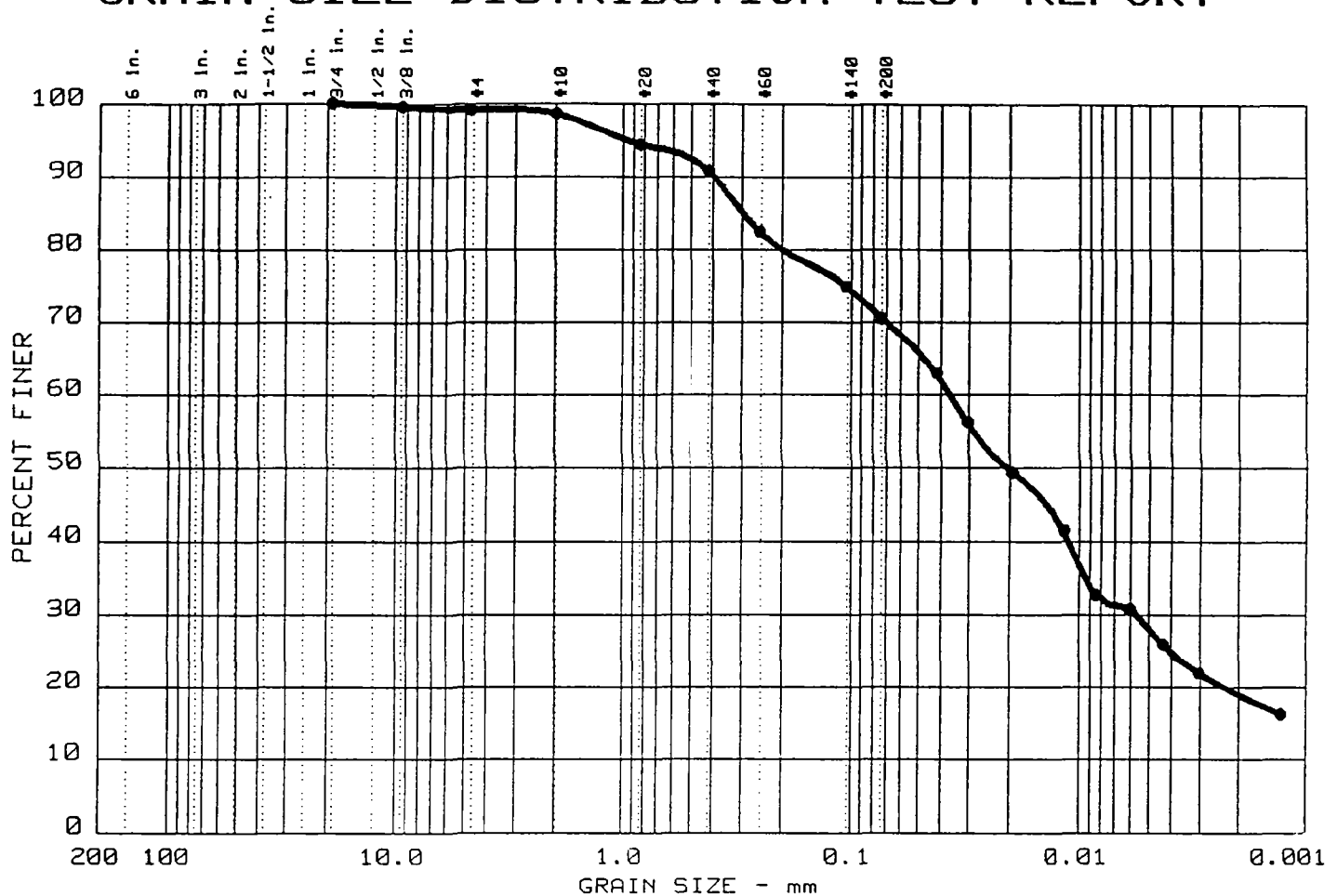
Maximum dry density = 112.5 pcf

Optimum moisture = 17.0 %



PSI, Inc.

GRAIN SIZE DISTRIBUTION TEST REPORT



PROCTOR TEST REPORT

Curve No.:

Project No.: 130-70040-11

Date: 5-12-97

Project: ORMET PRIMARY ALUMINUM

Location: B, NORTH OF RT. 7 SITE

Elev/Depth: 62"

Remarks:

RAMMER TYPE: MANUAL PREP. METHOD: MOIST

MATERIAL DESCRIPTION

Description: LEAN CLAY WITH SAND, TRACE ROCK FRAG., BROWN

Classifications: USCS: CL

AASHTO: A-4(5)

Nat. Moist. = %

Sp.G. =

Liquid Limit = 30

Plasticity Index = 10

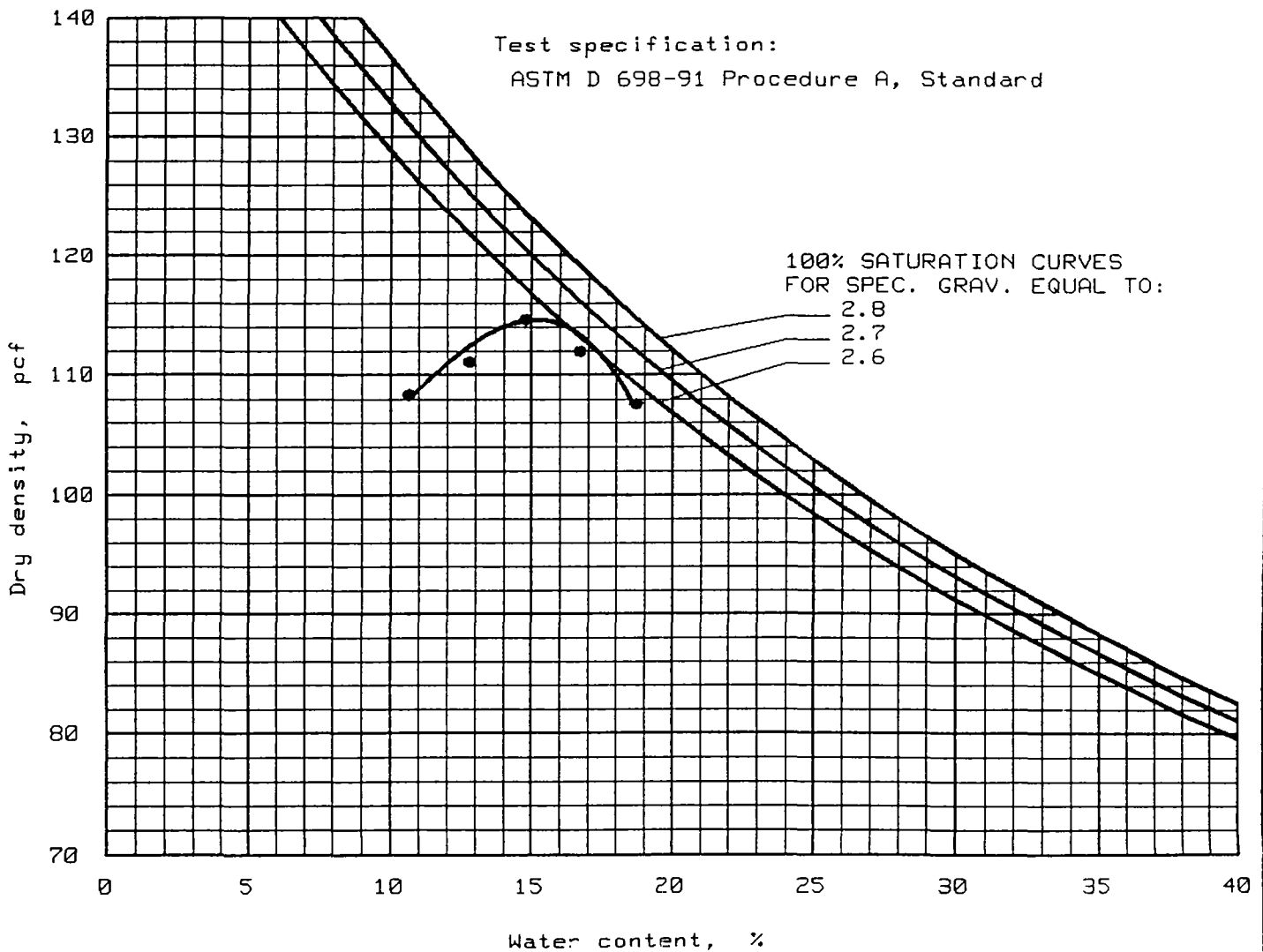
% > No. 4 = 0.9%

% < No. 200 = 70.5%

TEST RESULTS

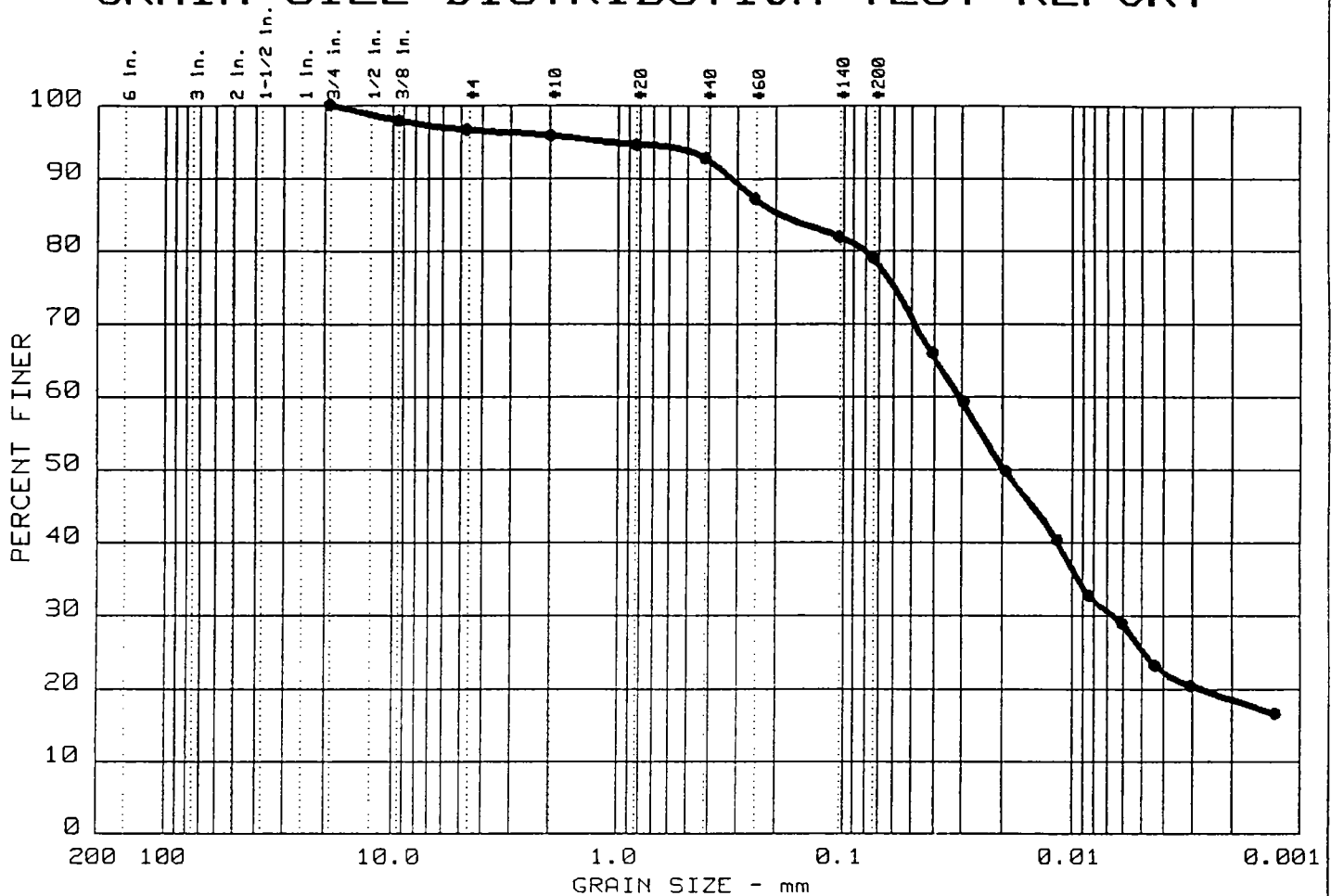
Maximum dry density = 114.5 pcf

Optimum moisture = 15.0 %



PSI, Inc.

GRAIN SIZE DISTRIBUTION TEST REPORT



PROCTOR TEST REPORT

Curve No.:

Project No.: 130-70040-12

Date: 5-12-97

Project: ORMET PRIMARY ALUMINUM

Location: C, NORTH OF RT. 7 SITE

Elev/Depth: 48"

Remarks:

RAMMER TYPE: MANUAL PREP. METHOD: MOIST

MATERIAL DESCRIPTION

Description: LEAN CLAY WITH SAND, TRACE ROCK FRAG., BROWN

Classifications: USCS: CL

AASHTO: A-6(7)

Nat. Moist. = %

Sp.G. =

Liquid Limit = 30

Plasticity Index = 11

% > No. 4 = 3.4%

% < No. 200 = 78.9%

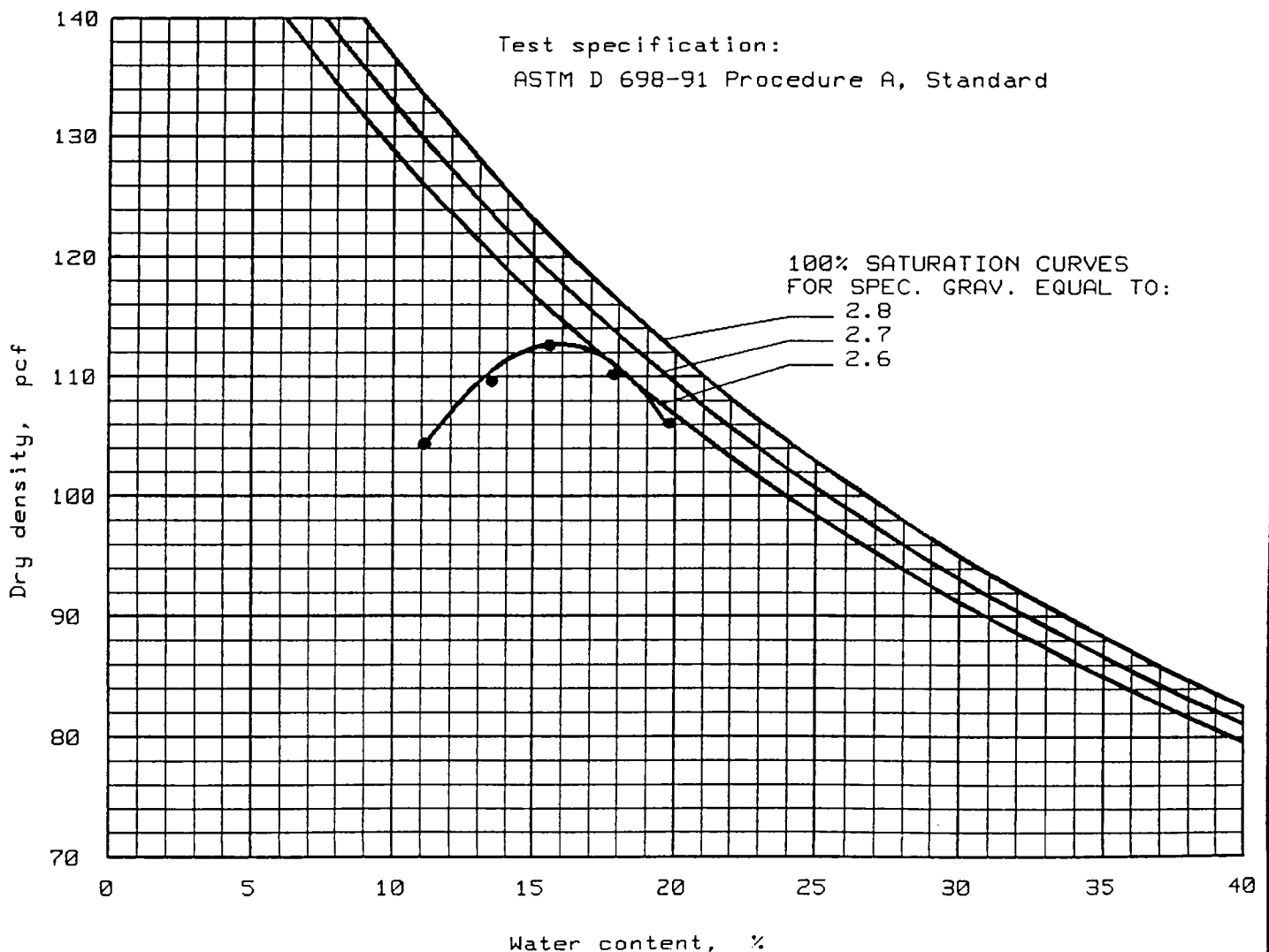
TEST RESULTS

Maximum dry density = 112.5 pcf

Optimum moisture = 16.0 %

Test specification:

ASTM D 698-91 Procedure A, Standard



JUN 19 1997

O'BRIEN & GERE
TECHNICAL SERVICES INC.

REPORT OF MOISTURE DENSITY RELATIONSHIP OF SOIL

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: June 13, 1997

OUR REPORT NO.: 130-70040-22

TEST DATA

Visual Classification Brown, Lean, Sandy CLAY, Trace
Rock Fragments

Sample Source Rt. 7 Borrow Site

Method of Test ASTM D-698
Rammer: Manual

Method of Preparation: Dry

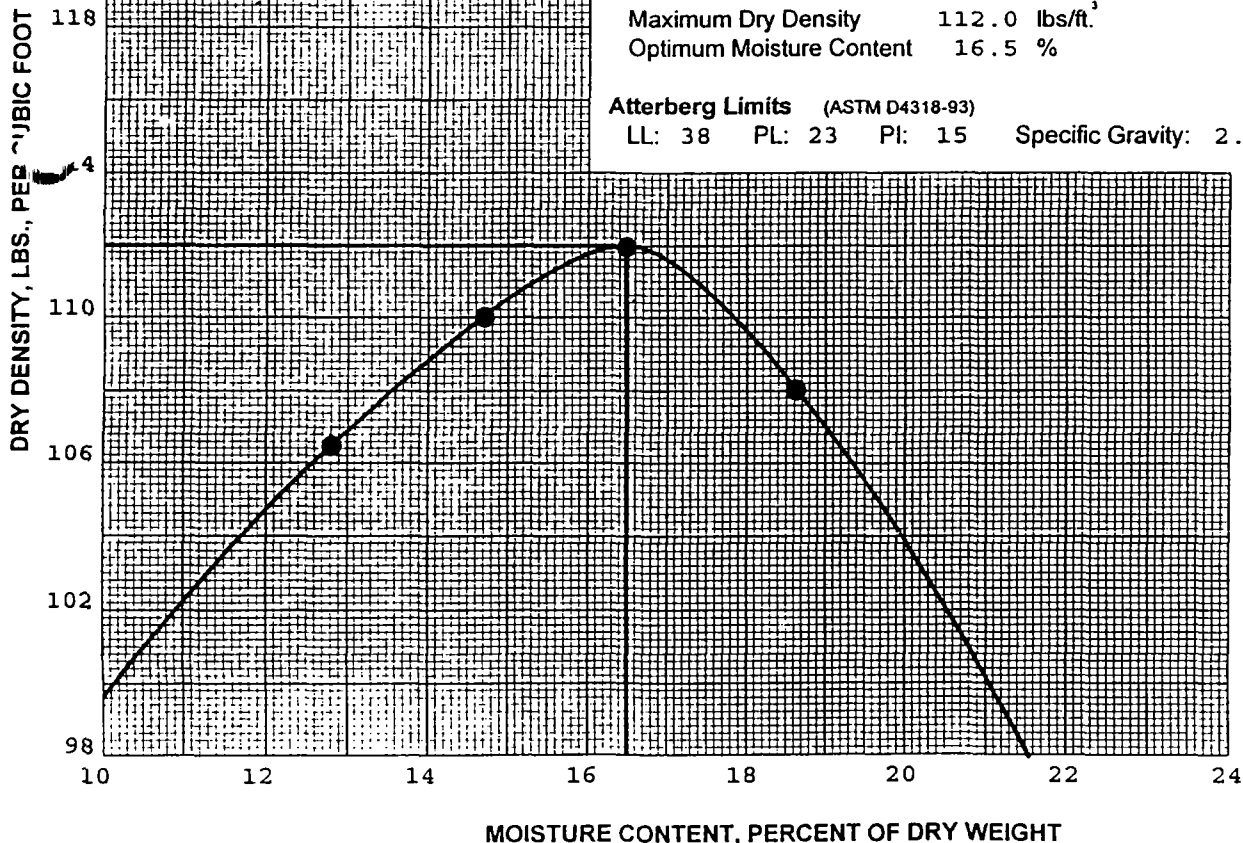
Test Results

Maximum Dry Density 112.0 lbs/ft.³

Optimum Moisture Content 16.5 %

Atterberg Limits (ASTM D4318-93)

LL: 38 PL: 23 PI: 15 Specific Gravity: 2.70 (estimate)



Grain Size Analysis
(ASTM C136-93 AND/OR C117-90)
Sieve Size Percent Passing

REMARKS: PSI Lab No. 130-7066
68% Finer Than No. 200 Sieve

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF MOISTURE DENSITY RELATIONSHIP OF SOIL

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: July 18, 1997

OUR REPORT NO.: 130-70040-34

TEST DATA

Visual Classification Light Brown, Lean, Sandy CLAY,
Trace Gravel (CL)
Sample Source TSCA Cell InPlace Fill

Method of Test ASTM D-698

Rammer: Manual

Method of Preparation: Dry

Test Results

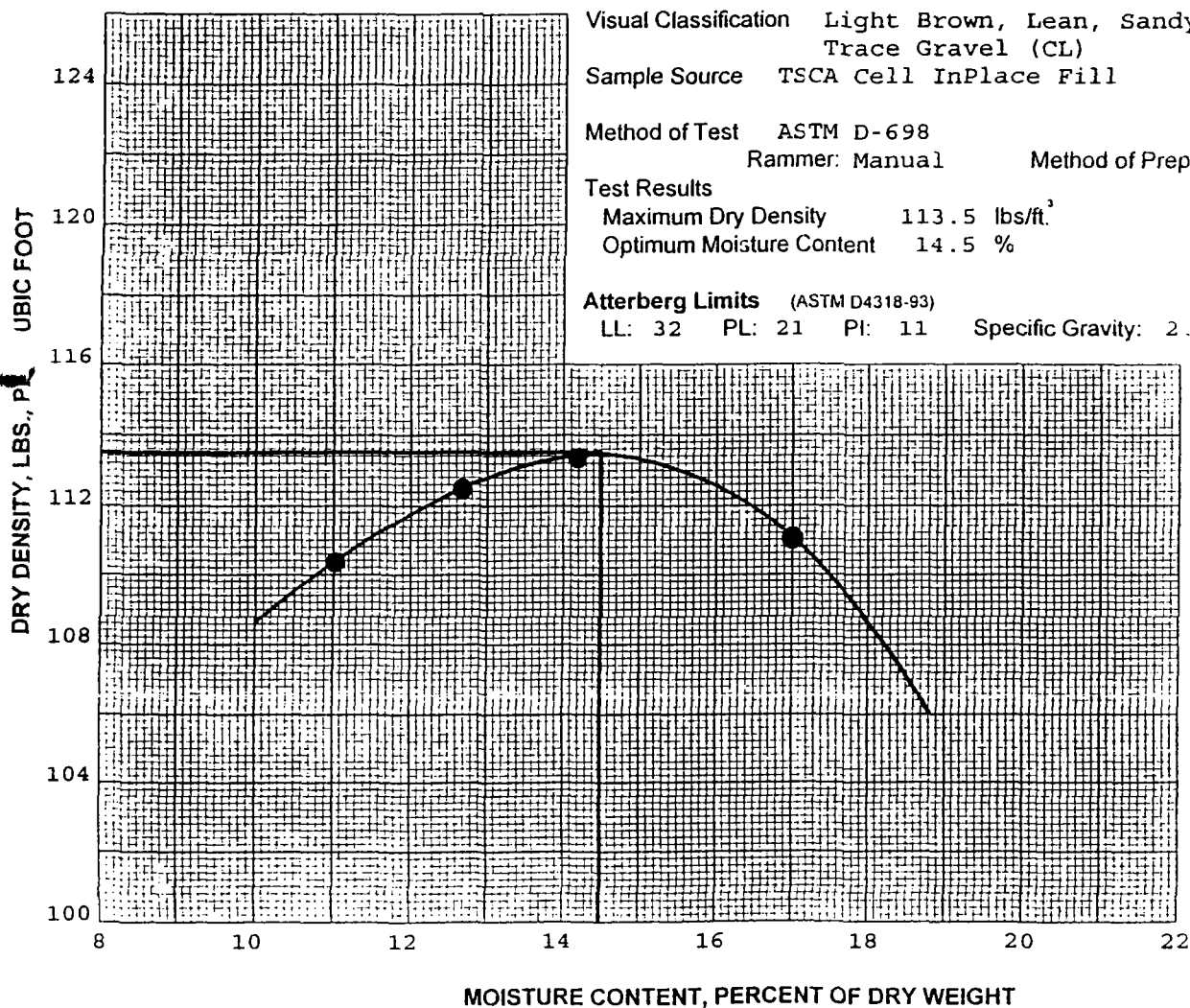
Maximum Dry Density 113.5 lbs/ft.³

Optimum Moisture Content 14.5 %

Atterberg Limits (ASTM D4318-93)

LL: 32 PL: 21 PI: 11 Specific Gravity: 2.70 (estimate)

Grain Size Analysis:
(ASTM C136-93 AND/OR C117)
Sieve Size Percent Passing



REMARKS: Lab No. 130-7087
Material Finer Than No. 200 Sieve = 63.2%

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF MOISTURE DENSITY RELATIONSHIP OF SOIL

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: August 05, 1997

OUR REPORT NO.: 130-70040-36

TEST DATA

Visual Classification Light Brown, Clayey SILT, Little
Fine Sand

Sample Source In-Place Fill at Center of Waterfront
Berm

Method of Test ASTM D-698

Rammer: Manual

Method of Preparation: Dry

Test Results

Maximum Dry Density 112.5 lbs/ft.³

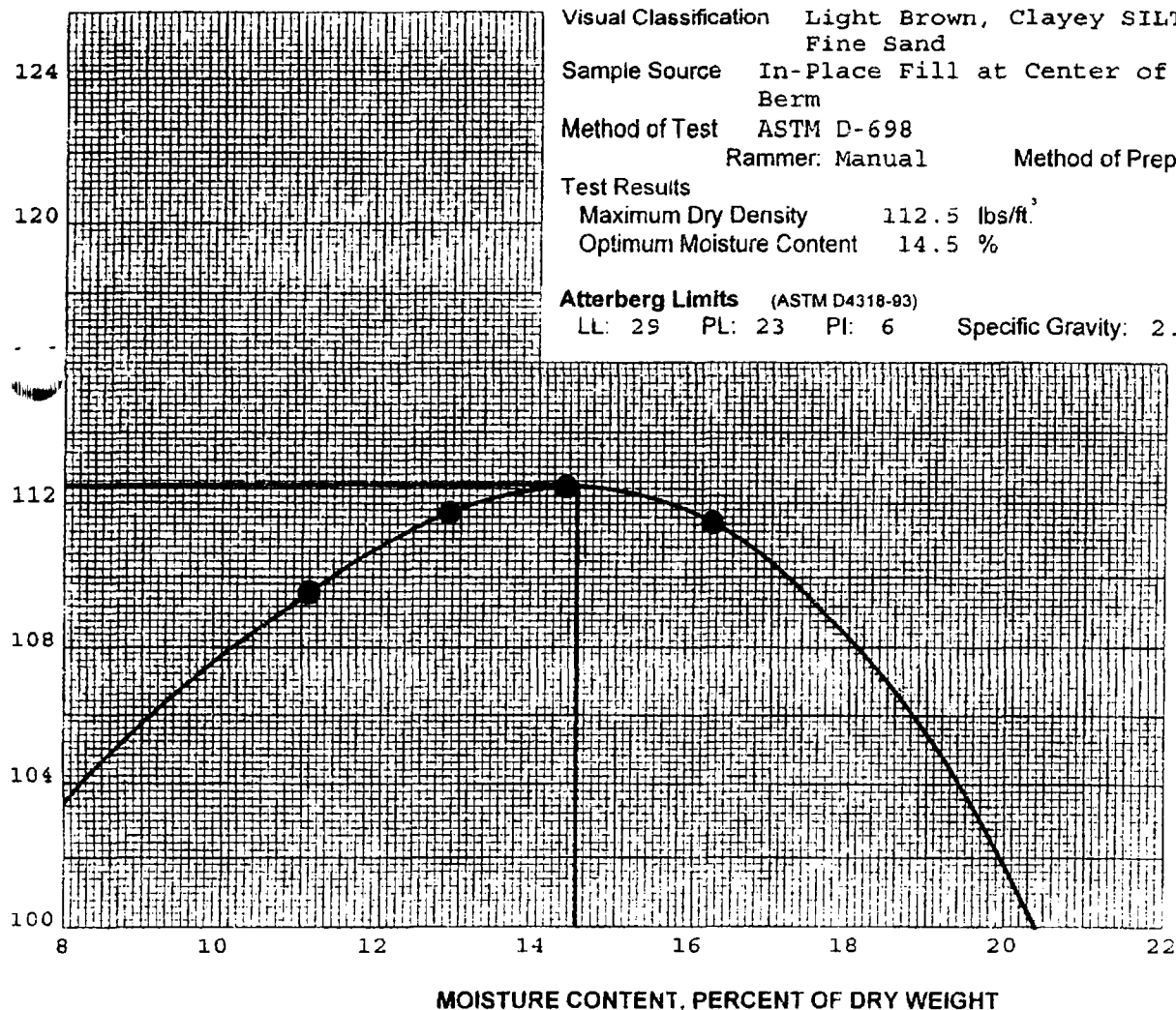
Optimum Moisture Content 14.5 %

Atterberg Limits (ASTM D4318-93)

LL: 29 PL: 23 PI: 6 Specific Gravity: 2.67 (estimate)

Grain Size Analysis
(ASTM C136-93 AND/OR C117-90)

Sieve Size	Percent Passing
20	68.9



MARKS: Lab No. 130-7097
Percent Finer Than No. 200 Sieve = 68.9

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF MOISTURE DENSITY RELATIONSHIP OF SOIL

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 30, 1997

OUR REPORT NO.: 130-70040-52

TEST DATA

Visual Classification Brown, Clayey SILT, Little Fine
Sand, Trace Shale Fragments

Sample Source CMSD: Grid Coord. N1600, W3050

Method of Test ASTM D-698

Rammer: Manual

Method of Preparation: Dry

Test Results

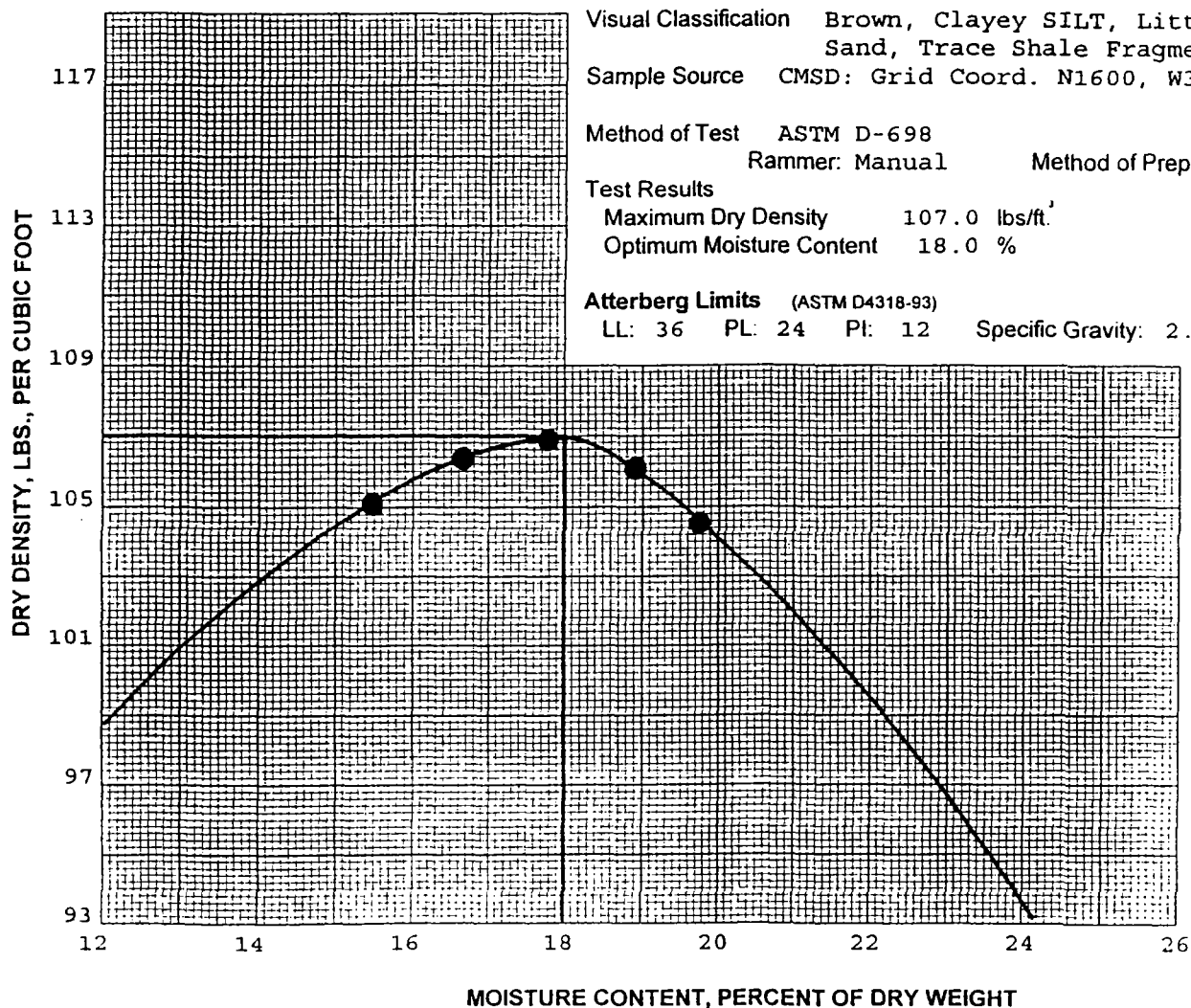
Maximum Dry Density 107.0 lbs/ft.³

Optimum Moisture Content 18.0 %

Atterberg Limits (ASTM D4318-93)

LL: 36 PL: 24 PI: 12 Specific Gravity: 2.70 (estimate)

Grain Size Analysis
(ASTM C136-93 AND/OF)
Sieve Size P
Size P



REMARKS: Lab No. 130-7119
Percent Finer Than No. 200 Sieve = 79.2

Respectfully submitted,
Professional Service Industries

DDDDDD	RRRRR	AAAA	FFFFFF	TTTTT
DD DD	RR RR	AA AA	FF	TT
DD DD	RRRRR	AAAAAA	FFFFFF	TTTTT
DD DD	RR RR	AA AA	FF	TT
DDDDDD	RR RR	AA AA	FF	TT

REPORT OF MOISTURE DENSITY RELATIONSHIP OF SOIL

TESTED FOR: TONY GRISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT

ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: April 17, 1998

CJR REPORT NO: 130-70040-56

TEST DATA

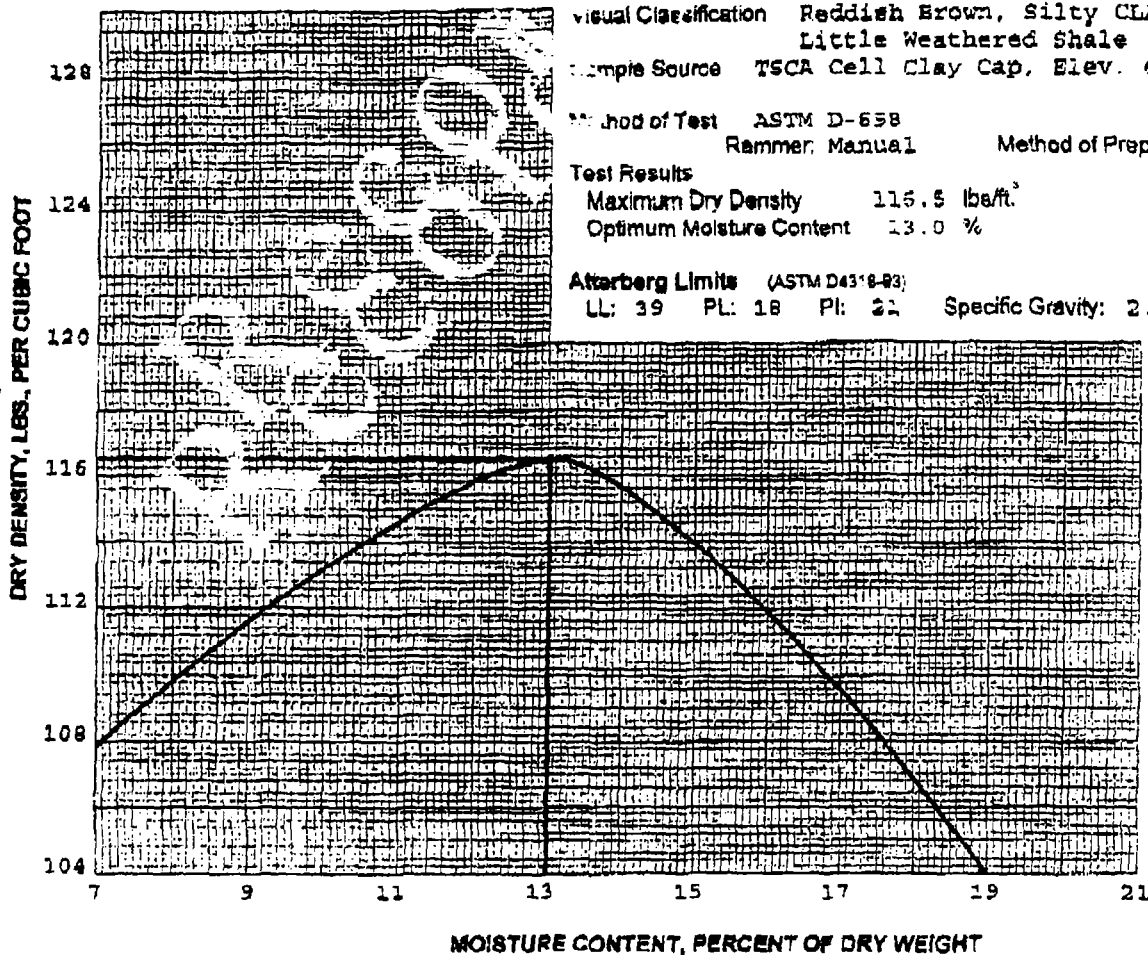
Visual Classification Reddish Brown, Silty CLAY,
Little Weathered Shale
Sample Source TSCA Cell Clay Cap, Elev. 669.52

Method of Test ASTM D-658
Rammer, Manual

Method of Preparation: Dry

Test Results
Maximum Dry Density 115.5 lbs/ft.³
Optimum Moisture Content 13.0 %

Atterberg Limits (ASTM D4318-83)
LL: 39 PL: 18 PI: 21 Specific Gravity: 2.72 (estimate)



Grain Size Analysis
(ASTM C136-93 AND/OR C117-80)
Sieve Size Percent Passing

REMARKS: Lab No. 130-8030

Respectfully submitted,
Professional Service Industries, Inc.

COMPACTION REPORTS

August 13, 1997

O'Brien & Gere Technical Services, Inc.
5000 Brittonfield Parkway
P.O. Box 5240
Syracuse, NY 13057
Attn: Mr. Anthony Geiss

Re: Ormet Primary Aluminum Corporation
Superfund Site
Hannibal, OH
PSI Project No. 130-70040
Summary Report No. 1

Dear Mr. Geiss:

In accordance with the project specifications, Professional Service Industries, Inc. (PSI) is please to provide the following summary of construction testing to date of fill materials placed at the reference project site.

Temporary Berm

Compaction testing of in-place temporary berm fill materials was performed on June 10 and 11, 1997 (PSI Report No.'s 130-70040-20 and 21). Tests performed on June 20, 1997 indicate percent compaction results below the required 95 percent minimum specifications and in-place moisture contents above the ± 2 percent of optimum specifications. On June 21, 1997, the fill materials were scarified, aerated, and recompacted. Re-tests performed on June 21 indicate compaction and moisture content results which meet project specifications.

TSCA Cell & CRDA

Compaction testing of in-place TSCA cell and CRDA berm materials was performed on July 10, 11, 14, and 15, 1997 (PSI Report No.'s 130-70040-30, 31, 32, and 33). Tests performed on these dates indicate percent compaction results and moisture content results which meet project specifications.

River Extension Berm

Compaction testing of in-place river extension berm materials was performed on August 1, 1997 (PSI Report No. 130-70040-35). Tests performed on this date indicate percent compaction results and moisture content results which meet project specifications.

Information To Build On

Permanent Outfall

Compaction testing of in-place permanent outfall materials was performed on August 7 and 8, 1997 (PSI Report No.'s 130-70040-37 and 38). Tests performed August 7 indicated in-place moisture contents in excess of project specifications (± 2 percent of optimum). Based on the moisture content test results obtained on that date, the contractor elected to scarify, aerate, and recompact the fill materials. These operations were performed on August 7 and 8, 1997. Re-tests performed on August 8 indicate percent compaction results and moisture content results which meet project specifications.

CMSD Riverfront Berm

Compaction testing of in-place materials in the southeast quadrant area of the CMSD Riverfront Berm was performed on August 11, 1997 (PSI Report No. 130-70040-39). Test results indicated percent compaction results and moisture content results which meet project specifications.

Laboratory Testing


Materials placed for the structures indicated above were sampled by PSI every 5000 cubic yards and returned to our laboratory for testing in accordance with the requirements outlined in Table 3 of the project Construction Field Sampling Plan. Laboratory test results are indicated on PSI Report No.'s 130-70040-22, 34, and 36.

General Observations

To date, soil materials utilized for cell and berm fill have been observed to be consistent with those materials sampled during the borrow area qualification phase of the project. Lift thicknesses were measured during construction of the TSCA Cell and found to have been placed in accordance with project requirements for lift thickness. Due to the excessive pumping and instability of original subgrades encountered prior to berm placement, bridge lifts were implemented to support construction traffic. Compaction testing in these areas has been limited to the upper-most lift.

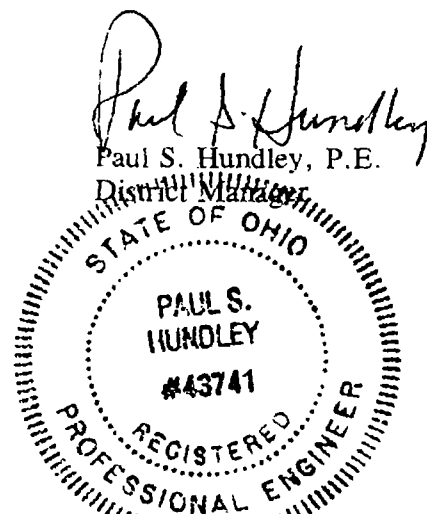
Field and laboratory test reports discussed herein are enclosed. Please contact us if there are any questions regarding the information provided herein.

Very truly yours,
PROFESSIONAL SERVICE INDUSTRIES, INC.


Stephen M. Simonette
Branch Manager

SMS:PSH/dlg

Enclosures



REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: June 10, 1997

OUR REPORT NO.: 130-70040-20

TEST DATA: (11) BROWN, LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS OPT. MOIST. = 15.0%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% Min
1	12"	636.98	11	114.5	18.3	126.0	106.5	93.0	1 - B - D
2	12"	632.15	11	114.5	20.6	129.5	107.4	93.8	1 - B - D
3	12"	629.33	11	114.5	19.4	127.0	106.4	92.9	1 - B - D
4	5"	632.15	11	114.5	19.6	128.0	107.0	93.4	1 - B - D

TEST LOCATION: Temporary Berm Fill

1	12' S of N1560
2	9' S of N1450
3	30' N of N1250
4	Same location as Test #2 - Sand Cone Test Method

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (11) ASTM D-698

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

- A. TEST RESULTS COMPLY WITH SPECIFICATIONS
- B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
- C. RETEST OF PREVIOUS TEST
- D. MOISTURE IN EXCESS OF SPECIFICATIONS
- E. MOISTURE BELOW SPECIFICATIONS

TEST INSTRUMENT: Troxler, 3411-B, 19355

REMARKS:

STANDARD COUNT M: 670 D: 2778
ADJUSTMENT DATA M: D:

TECHNICIAN: David Pickens
TIME: 11:30 am - 08:00 pm

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: June 11, 1997

OUR REPORT NO.: 130-70040-21

TEST DATA: (11) BROWN, LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS OPT. MOIST. = 15.0%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% Min
1	12"	629.33	11	114.5	15.6	129.1	111.7	97.6	1 - A - C
2	12"	632.15	11	114.5	14.4	132.6	115.9	101.2	1 - A - C
3	12"	636.98	11	114.5	16.0	127.7	110.1	96.2	1 - A - C

TEST LOCATION: Temporary berm fill

1	30'N of N1250
2	9'N of N1450
3	12'S of N1560

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (11) ASTM D-698

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFICATIONS
B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATIONS
E. MOISTURE BELOW SPECIFICATIONS

TEST INSTRUMENT: Troxler, 3411-B

REMARKS:

STANDARD COUNT M: 673 D: 2777
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 12:00 pm - 06:00 pm

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: July 10, 1997

OUR REPORT NO.: 130-70040-30

TEST DATA: (11) BROWN, LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS OPT. MOIST. = 15.0%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% Min
1	8"	631.31	11	114.5	16.6	133.4	114.4	99.9	1 - A
2	8"	631.55	11	114.5	15.4	131.8	114.2	99.7	1 - A
3	8"	631.45	11	114.5	15.8	132.1	114.1	99.7	1 - A
4	8"	626.93	11	114.5	15.7	130.6	112.9	98.6	1 - A
5	8"	628.71	11	114.5	16.1	131.9	113.6	99.2	1 - A
6	4"	631.45	11	114.5	16.8	133.4	114.2	99.7	1 - A

TEST LOCATION: CRDA Berm - West Side

1	189'S of N 1350 line
2	36'S of N 1350 line
3	24'S of N 1400 line
4	W outfall off berm
5	E outfall off berm
6	24'S of N 1400 line (sand cone method)

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-68(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (11) ASTM D-698

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFICATIONS
B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATIONS
E. MOISTURE BELOW SPECIFICATIONS

TEST INSTRUMENT: Troxler, 3430

STANDARD COUNT M: 689 D: 3045

REMARKS:

ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens

TIME: 07:00 am - 04:15 pm

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: July 11, 1997

OUR REPORT NO.: 130-70040-31

TEST DATA: (11) BROWN, LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS OPT. MOIST. = 15.0%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% Min
1	8"	657.59	11	114.5	14.8	126.7	110.4	96.4	1 - A
2	8"	656.81	11	114.5	15.4	126.2	109.4	95.5	1 - A

TEST LOCATION: TSCA west and south wall clay liner

1	West wall - (first lift meas. = 7.5")
2	South wall - (first lift meas. = 8.5")

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry
density obtained on sample indicated by
soil ID number.

* (11) ASTM D-698

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFICATIONS
B. PERCENT COMPACTION DOES NOT COMPLY
WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATIONS
E. MOISTURE BELOW SPECIFICATIONS

TEST INSTRUMENT: Troxler, 3430

STANDARD COUNT M: 683 D: 3050

REMARKS:

ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens

Respectfully submitted,

TIME: 12:15 pm - 06:15 pm

Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

ESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: July 14, 1997

OUR REPORT NO.: 130-70040-32

TEST DATA: (11) BROWN, LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS OPT. MOIST. = 15.0%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% Min
1	8"	652.98	11	114.5	14.2	124.5	109.0	95.2	1 - A
2	8"	638.67	11	114.5	16.6	130.1	111.6	97.5	1 - A
3	8"	653.70	11	114.5	15.4	126.8	109.9	96.0	1 - A

TEST LOCATION: TSCA cell fill

1	N wall (lift thickness meas. = 8")
2	Bottom of cell (lift thickness meas. = 7.5")
3	E wall (lift thickness meas. = 8.0")

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (11) ASTM D-698

TEST INSTRUMENT: Troxler, 3430

REMARKS:

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFICATIONS
B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATIONS
E. MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 687 D: 3049
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 04:30 am - 10:30 am

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: July 15, 1997

REVISION #1
OUR REPORT NO.: 130-70040-33

PAGE 1 OF 2

TEST DATA: (11) BROWN, LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS OPT. MOIST. = 15.0%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% Min
1	8"	654.06	11	114.5	16.7	127.7	109.4	95.5	1 - A
2	8"	650.46	11	114.5	16.4	126.9	109.0	95.2	1 - A
3	8"	654.55	11	114.5	16.7	130.6	111.9	97.7	1 - A
4	8"	657.01	11	114.5	13.7	131.8	115.9	101.2	1 - A
5	8"	639.08	11	114.5	14.5	128.6	112.3	98.1	1 - A
6	4"	639.08	11	114.5	14.9	134.0	116.6	101.8	1 - A

TEST LOCATION: T.S.C.A. cell fill

1	N wall (lift thickness meas. = 6")
2	E wall (lift thickness meas. = 6")
3	S wall (lift thickness meas. = 6")
4	W wall (lift thickness meas. = 6")
5	Bottom (lift thickness meas. = 6")
6	Sand cone same location as test #5

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (11) ASTM D-698

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFICATIONS
B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATIONS
E. MOISTURE BELOW SPECIFICATIONS

TEST INSTRUMENT: Troxler, 3430

STANDARD COUNT M: 687 D: 3070

REMARKS:

ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens

TIME: 05:30 am - 08:00 pm

Respectfully submitted,
Professional Service Industries, Inc.

Information To Build On

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: July 15, 1997

REVISION #1
OUR REPORT NO.: 130-70040-33

PAGE 2 OF 2

TEST DATA: (11) BROWN, LEAN CLAY WITH SAND, TRACE ROCK FRAGMENTS OPT. MOIST. = 15.0%

TEST NO	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec.	95% Min
7	4"	638.67	11	114.5	16.2	132.1	113.7	99.3	1 - A	

TEST LOCATION: T.S.C.A. cell fill

7 Sand cone same location as test #2 on 7-14-97

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (11) ASTM D-698

TEST INSTRUMENT: Troxler, 3430

REMARKS:

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

- A. TEST RESULTS COMPLY WITH SPECIFICATIONS
- B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
- C. RETEST OF PREVIOUS TEST
- D. MOISTURE IN EXCESS OF SPECIFICATIONS
- E. MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 687 D: 3070
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 05:30 am - 08:00 pm

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: August 01, 1997

OUR REPORT NO.: 130-70040-35

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 90% Min
1	12"	630.5	34	113.5	16.2	129.3	111.3	98.1	1 - A
2	12"	630.0	34	113.5	15.8	129.2	111.6	98.3	1 - A
3	12"	631.0	34	113.5	15.0	124.2	108.0	95.2	1 - A
4	4"	630.0	34	113.5	15.4	130.1	112.7	99.3	1 - A

TEST LOCATION: River extension berm

1	W 3185, N 1070
2	W 2991, N 1159
3	W 2818, N 1268
4	Same as test #2 (sand cone method)

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-86(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

TEST INSTRUMENT: Troxler, 3430

REMARKS:

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

- A. TEST RESULTS COMPLY WITH SPECIFICATIONS
- B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
- C. RETEST OF PREVIOUS TEST
- D. MOISTURE IN EXCESS OF SPECIFICATIONS
- E. MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 693 D: 3057
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 08:15 am - 05:15 pm

Respectfully submitted,
Professional Service Industries, Inc.

DAILY FIELD REPORT

ESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: August 07, 1997

OUR REPORT NO.: 130-70040-37

WEATHER: Sunny

TEMPERATURE RANGE: 65 TO: 81

TIME: 08:00 am - 02:15 pm

INSPECTOR: Dave Pickens

TYPE OF INSPECTION BEING PERFORMED

☒ SOILS

☐ CONCRETE

☐ FOUNDATIONS

☐ BATCH PLANT

☒ CONTROLLED FILL (COMPACTION)

☐ PLACEMENT (JOB SITE)

☐ ASPHALT

☐ OTHER

☐ BATCH PLANT

☐ PLACEMENT (JOB SITE)

BRIEF RESUME OF WORK ACCOMPLISHED THIS DATE:

As requested, PSI reported to the referenced site to provide construction materials testing and inspection services. Moisture/density tests were performed this date on fill materials placed for the permanent outfall berm. Nuclear tests indicated in-place moisture contents greater than the material optimum moisture content plus 2 percent. The contractor was advised to scarify the upper twelve inches of material, aerated, and recompact. The operations will be performed today and re-testing performed on Friday, August 8, 1997.

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF MOISTURE DENSITY RELATIONSHIP OF SOIL

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: June 13, 1997

OUR REPORT NO.: 130-70040-22

TEST DATA

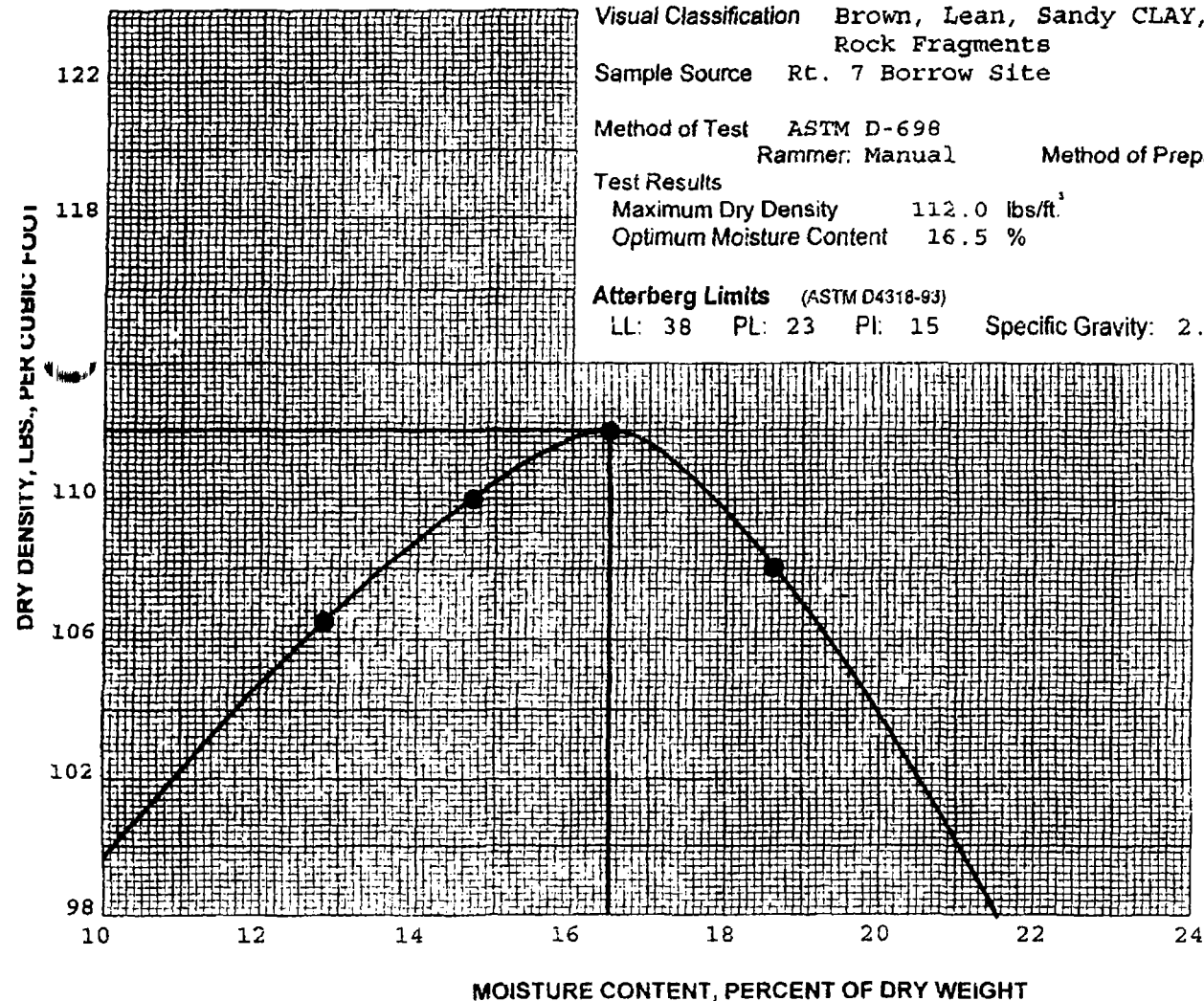
Visual Classification Brown, Lean, Sandy CLAY, Trace
Rock Fragments
Sample Source Rt. 7 Borrow Site

Method of Test ASTM D-698
Rammer: Manual Method of Preparation: Dry

Test Results
Maximum Dry Density 112.0 lbs/ft.³
Optimum Moisture Content 16.5 %

Atterberg Limits (ASTM D4318-93)
LL: 38 PL: 23 PI: 15 Specific Gravity: 2.70 (estimate)

Grain Size Analysis
(ASTM C136-93 AND/OR C117-90)
Sieve Size Percent Passing



REMARKS: PSI Lab No. 130-7066
68% Finer Than No. 200 Sieve

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF MOISTURE DENSITY RELATIONSHIP OF SOIL

ESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: July 18, 1997

OUR REPORT NO.: 130-70040-34

TEST DATA

Visual Classification Light Brown, Lean, Sandy CLAY,
Trace Gravel (CL)

Sample Source TSCA Cell InPlace Fill

Method of Test ASTM D-698

Rammer: Manual

Method of Preparation: Dry

Test Results

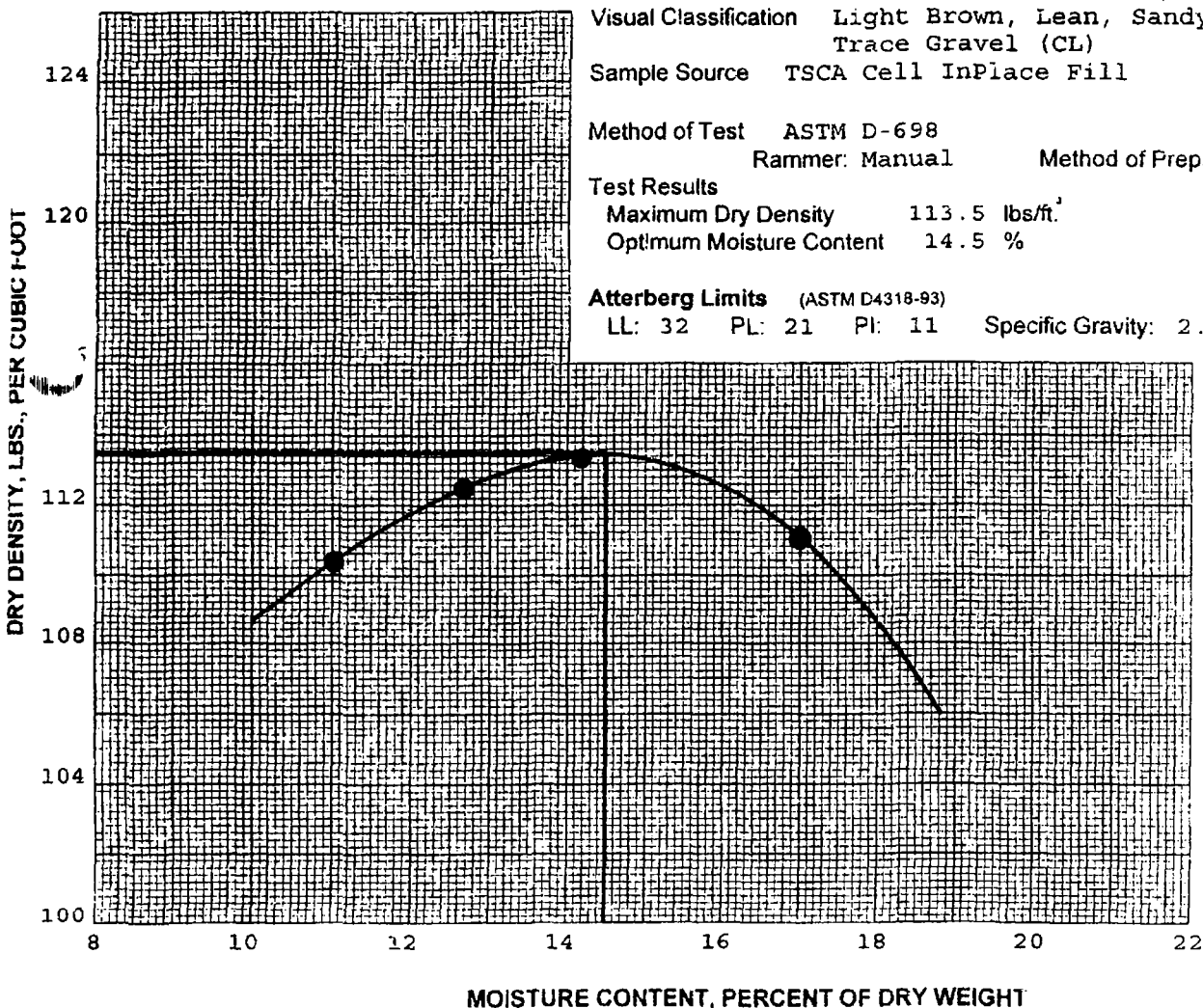
Maximum Dry Density 113.5 lbs/ft.³

Optimum Moisture Content 14.5 %

Atterberg Limits (ASTM D4318-93)

LL: 32 PL: 21 PI: 11 Specific Gravity: 2.70 (estimate)

Grain Size Analysis
(ASTM C136-93 AND/OR C117-90)
Sieve Size Percent
Passing



REMARKS: Lab No. 130-7087
Material Finer Than No. 200 Sieve = 63.2%

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: August 08, 1997

OUR REPORT NO.: 130-70040-38

EST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% Min
1	12"	633.28	34	113.5	15.8	129.2	111.6	98.3	1 - A
2	12"	634.57	34	113.5	15.4	131.9	114.3	100.7	1 - A
3	12"	644.60	34	113.5	15.9	134.4	116.0	102.2	1 - A
4	4"	644.60	34	113.5	15.8	133.9	115.6	101.9	1 - A

EST LOCATION: Permanent outfall

1	Station 4+10
2	Station 2+90
3	Station 0+80
4	Station 0+80 (sand cone method)

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:
DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

EST INSTRUMENT: Troxler, 3430, 25905

REMARKS:

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

- A. TEST RESULTS COMPLY WITH SPECIFICATIONS
- B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
- C. RETEST OF PREVIOUS TEST
- D. MOISTURE IN EXCESS OF SPECIFICATIONS
- E. MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 699 D: 3430
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 09:30 am - 04:30 pm

Respectfully submitted,
Professional Service Industries, Inc.

September 15, 1997

O'Brien & Gere Technical Services, Inc.
5000 Brittonfield Parkway
P.O. Box 5240
Syracuse, NY 13057
Attn: Mr. Anthony Geiss

Re: Ormet Primary Aluminum Corporation
Superfund Site
Hannibal, OH
PSI Project No. 130-70040
Summary Report No. 3

Dear Mr. Geiss:

In accordance with the project specifications, Professional Service Industries, Inc. (PSI) is please to provide the following summary of construction testing to date of fill materials placed at the reference project site. The summary reflects testing performed between August 29 and September 12, 1997.

004 Permanent Outfall Channel

Compaction testing of in-place fill materials for the 004 Permanent Outfall Channel were performed on September 3 and 5, 1997 (PSI Report No.'s 130-70040-41 and 43). Tests performed on September 3, 1997 indicate percent compaction results below the required 95 percent minimum specifications and in-place moisture contents above the ± 2 percent of optimum specifications. On September 4, 1997, the fill materials were scarified, aerated, and recompact. Re-tests performed on September 5 indicate compaction and moisture content results which meet project specifications.

CMSD Riverside Slope

Compaction testing of in-place fill materials for the 004 Permanent Outfall Channel were performed on September 5, 8, and 9, 1997 (PSI Report No.'s 130-70040-43, 44, and 45). Tests performed on September 5, 1997 indicate compaction and moisture content results which meet project specifications. Test No. 2 on September 8, 1997 indicates a percent compaction result below the required 95 percent minimum specifications and an in-place moisture content above the ± 2 percent of optimum specifications. On September 9, 1997, the fill materials were scarified, aerated, and recompact. Re-tests and additional tests performed on September 9 indicate compaction and moisture content results which meet project specifications.

Information To Build On

Laboratory Testing

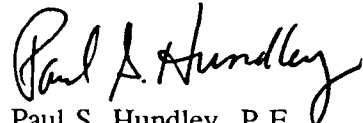
Sieve Analysis, Relative Density, and Permeability tests were performed on a sample obtained by PSI on from the Brown's Gravel Pit in Sardis, OH. The sand sample was submitted for testing to verify permeability requirements of Section 02200-2.06 of the project specifications (FSPSA Soil Cover Material). Test results indicate that the materials do not meet the minimum silt content and permeability requirements (see attached PSI Report No.'s 130-70040-42 and 46).

Please contact us if there are any questions regarding the information provided herein.

Very truly yours,
PROFESSIONAL SERVICE INDUSTRIES, INC.



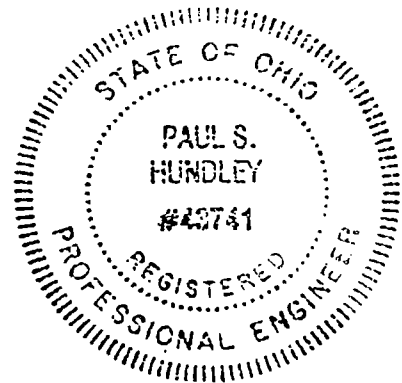
Stephen M. Simonette
Branch Manager



Paul S. Hundley, P.E.
District Manager

SMS:PSH/tlg

Enclosures



REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 05, 1997

OUR REPORT NO.: 130-70040-43

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% Min
1	12"	644.66	34	113.5	12.8	130.5	115.7	101.9	1 - A - C
2	12"	642.89	34	113.5	14.3	128.1	112.1	98.8	1 - A - C
3	4"	642.89	34	113.5	14.7	128.7	112.2	98.9	1 - A
4	6"	641.0	34	113.5	15.8	132.1	114.1	100.5	1 - A
5	6"	648.0	34	113.5	15.0	131.6	114.4	100.8	1 - A
6	6"	651.0	34	113.5	15.6	131.0	113.3	99.8	1 - A

TEST LOCATION: 004 permanent outfall channel retests and CMSD riverside slope

1	Grid Coord. N1626, W3386 (retest of test #1 on 9-3-97)
2	Grid Coord. N1591, W3382 (retest of test #2 on 9-3-97)
3	Same location as test #2 (sand cone method)
4	Grid Coord. N1150, W3250
5	Grid Coord. N1200, W3100
6	Grid Coord. N1250, W 3000

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFICATION
B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATIONS
E. MOISTURE BELOW SPECIFICATIONS

TEST INSTRUMENT: Troxler, 3430, 27459

STANDARD COUNT M: 696 D: 3167

REMARKS:

ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens

TIME: 07:45 am - 04:00 pm

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 03, 1997

OUR REPORT NO.: 130-70040-41

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% M:
1	12	644.66	34	113.5	17.7	120.4	102.3	90.1	1 - B - D
2	12	642.89	34	113.5	17.9	122.1	103.6	91.3	1 - B - D

TEST LOCATION: 004 Permanent Outfall Channel

1	Grid Coordinates N1626, W3386
2	Grid Coordinates N1591, W3382

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFICATION
B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATIONS
E. MOISTURE BELOW SPECIFICATIONS

TEST INSTRUMENT: Troxler, 3430, 25905

STANDARD COUNT M: 689 D: 3063

REMARKS: Failing test results provided to O'Brien & Gere, retests to be performed 9-4-97 after aeration and recompaction of materials.

ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens

Respectfully submitted,
Professional Service Industries, Inc.

TIME: 08:30 am - 04:00 pm

DAILY FIELD REPORT

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: August 07, 1997

OUR REPORT NO.: 130-70040-37

WEATHER: Sunny

TEMPERATURE RANGE: 65 TO: 81

INSPECTOR: Dave Pickens

TIME: 08:00 am - 02:15 p

TYPE OF INSPECTION BEING PERFORMED

☒ SOILS

☐ CONCRETE

☐ FOUNDATIONS

☐ BATCH PLANT

☒ CONTROLLED FILL (COMPACTION)

☐ PLACEMENT (JOB SITE)

☐ ASPHALT

☐ OTHER

☐ BATCH PLANT

☐ PLACEMENT (JOB SITE)

BRIEF RESUME OF WORK ACCOMPLISHED THIS DATE:

As requested, PSI reported to the referenced site to provide construction materials testing and inspection services. Moisture/density tests were performed this date on fill materials placed for the permanent outfall berm. Nuclear tests indicated in-place moisture contents greater than the material optimum moisture content plus 2 percent. The contractor was advised to scarify the upper twelve inches of material, aerated, and recompact. The operations will be performed today and re-testing performed on Friday, August 9, 1997.

Respectfully submitted,
Professional Service Industries, Inc

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 05, 1997

OUR REPORT NO.: 130-70040-43

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec.	95% M:
1	12"	644.66	34	113.5	12.8	130.5	115.7	101.9	1 - A - C	
2	12"	642.89	34	113.5	14.3	128.1	112.1	98.8	1 - A - C	
3	4"	642.89	34	113.5	14.7	128.7	112.2	98.9	1 - A	
4	6"	641.0	34	113.5	15.8	132.1	114.1	100.5	1 - A	
5	6"	648.0	34	113.5	15.0	131.6	114.4	100.8	1 - A	
6	6"	651.0	34	113.5	15.6	131.0	113.3	99.8	1 - A	

TEST LOCATION: 004 permanent outfall channel retests and CMSD riverside slope

1	Grid Coord. N1626, W3386 (retest of test #1 on 9-3-97)
2	Grid Coord. N1591, W3382 (retest of test #2 on 9-3-97)
3	Same location as test #2 (sand cone method)
4	Grid Coord. N1150, W3250
5	Grid Coord. N1200, W3100
6	Grid Coord. N1250, W 3000

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFICATION
B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATIONS
E. MOISTURE BELOW SPECIFICATIONS

TEST INSTRUMENT: Troxler, 3430, 27459

STANDARD COUNT M: 696 D: 3167

REMARKS:

ADJUSTMENT DATA M: D:

Respectfully submitted,
Professional Service Industries, Inc.

TECHNICIAN: Dave Pickens
TIME: 07:45 am - 04:00 pm

THESE TEST RESULTS APPLY ONLY TO THE SPECIFIC LOCATIONS NOTED AND MAY NOT REPRESENT ANY OTHER LOCATIONS OR ELEVATIONS
REPORTS MAY NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION BY PROFESSIONAL SERVICE INDUSTRIES, INC.

Information To Build On

October 20, 1997

O'Brien & Gere Technical Services, Inc.
5000 Brittonfield Parkway
P.O. Box 5240
Syracuse, NY 13057
Attn: Mr. Anthony Geiss

Re: Ormet Primary Aluminum Corporation
Superfund Site
Hannibal, OH
PSI Project No. 130-70040
Summary Report No. 4

Dear Mr. Geiss:

In accordance with the project specifications, Professional Service Industries, Inc. (PSI) is please to provide the following summary of construction testing to date of fill materials placed at the reference project site. The summary reflects testing performed between September 17 and October 6, 1997.

CMSD Slope

Compaction testing of in-place fill 17, 19, 23, 25 and October 6, 1997. Test No. 2 performed on September 17, meet project specifications. Materials tested on September 18 and September 19, 1997. Test result above the required 95 percent, the ± 2 percent of optimum specific

CMSD

were performed on September 17-48, 49, 50, 51 and 53). Test results indicate moisture content results which were retested and recompacted on September 18. Test results indicate a percent compaction of 95 percent in-place moisture content within

Laboratory Testing

In accordance with Table 3 of the Project Specifications, a sample of the materials was obtained on September 17, 1997. The relationship, Percent Finer Than No. 20 sieve, was obtained at CMSD Grid Coordinate

Plan, a sample of CMSD fill was obtained on September 17, 1997. Standard Moisture Density tests were performed on a sample of the materials (Report No. 130-70040-52).

Information To Build On

PSI Project No. 130-70040
Summary Report No. 4
October 20, 1997
Page 2 of 2

Test reports indicated herein are enclosed for your review. Please contact us if there are any questions regarding the information provided herein.

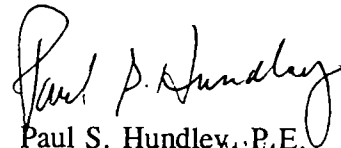
Very truly yours,
PROFESSIONAL SERVICE INDUSTRIES, INC.



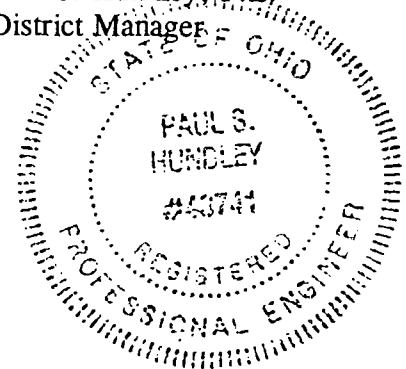
Stephen M. Simonette
Branch Manager

SMS:PSH/tlg

Enclosures



Paul S. Hundley, P.E.
District Manager



REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: October 06, 1997

OUR REPORT NO.: 130-70040-53

TEST DATA: (52) Brown, Clayey SILT, Little Fine Sand, Trace Shale Fragments OPT. MOIST. = 1
(34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95%
1	6"	651	52	107.0	16.1	118.8	102.3	95.6	1 - A
2	6"	645	34	113.5	14.9	129.8	113.0	99.6	1 - A
3	12"	663	34	113.5	14.6	125.4	109.4	96.4	1 - A
4	12"	662	34	113.5	15.1	127.9	111.1	97.9	1 - A
5	12"	661	34	113.5	14.9	126.6	110.2	97.1	1 - A
6	4"	663	34	113.5	14.7	128.7	112.2	98.9	1 - A

TEST LOCATION: CMSD slope and top

- 1 Grid coord. N1600, W3050
- 2 Grid coord. N1450, W3250
- 3 Grid coord. N1350, W3100
- 4 Grid coord. N1400, W3100
- 5 Grid coord. N1350, W3150
- 6 Same location as test #4 (sand cone method)

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (52) ASTM D-698 (34) ASTM D-698

TEST INSTRUMENT: Troxler, 3430, 27459

REMARKS:

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

- A. TEST RESULTS COMPLY WITH SPECIFIC
- B. PERCENT COMPACTION DOES NOT COM WITH SPECIFICATIONS
- C. RETEST OF PREVIOUS TEST
- D. MOISTURE IN EXCESS OF SPECIFICATIO
- E. MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 698 D: 3118
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 07:00 am - 02:30 pm

Respectfully submitted,
Professional Service Industries

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 25, 1997

OUR REPORT NO.: 130-70040-51

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	Spec.	COMMENTS*	95%
1	6"	650	34	113.5	16.5	131.9	113.2	99.7	1 - A		
2	6"	647	34	113.5	15.4	132.2	114.6	101.0	1 - A		

TEST LOCATION: CMSD north and northwest slopes

- 1 Grid coord. N1600, W3050
- 2 Grid coord. N1500, W3250

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

TEST INSTRUMENT: Troxler, 3430, 27459

REMARKS:

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

- A. TEST RESULTS COMPLY WITH SPECIFICATIONS
- B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
- C. RETEST OF PREVIOUS TEST
- D. MOISTURE IN EXCESS OF SPECIFICATION
- E. MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 694 D: 3118
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 07:45 am - 12:45 pm

Respectfully submitted,
Professional Service Industries

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 23, 1997

OUR REPORT NO.: 130-70040-50

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95
1	6"	647	34	113.5	15.2	127.9	111.0	97.8	1 - A

TEST LOCATION: CMSD west slope second lift

1	Grid coord. N1370, W3247

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFIC
B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATION
E. MOISTURE BELOW SPECIFICATIONS

TEST INSTRUMENT: Troxler, 3430, 25907

STANDARD COUNT M: 686 D: 3121

REMARKS:

ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens

TIME: 12:45 pm - 05:30 pm

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 19, 1997

OUR REPORT NO.: 130-70040-49

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95%
1	6"	643	34	113.5	13.5	126.0	111.0	97.8	1 - A
2	6"	645	34	113.5	14.1	129.7	113.7	100.2	1 - A
3	6"	647	34	113.5	15.9	126.3	109.0	96.0	1 - A - C

TEST LOCATION: CMSD west slope

1	Grid coord. N1150, W3325
2	Grid coord. N1275, W3275
3	Grid coord. N1400, W3256 (retest of test No. 2 on 9-17-97)

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

TEST INSTRUMENT: Troxler, 3430, 27459

REMARKS:

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

A. TEST RESULTS COMPLY WITH SPECIFICATIONS
B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
C. RETEST OF PREVIOUS TEST
D. MOISTURE IN EXCESS OF SPECIFICATION
E. MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 694 D: 3157
ADJUSTMENT DATA M. D:

TECHNICIAN: Dave Pickens
TIME: 11:30 am - 05:00 pm

Respectfully submitted,
Professional Service Industries

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 17, 1997

OUR REPORT NO.: 130-70040-48

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95%
1	6"	649	34	113.5	15.9	129.8	112.0	98.7	1 - A
2	6"	647	34	113.5	19.6	127.7	106.8	94.1	1 - B - D

TEST LOCATION: CMSD west slope

1	Grid coord. N1250, W3300
2	Grid coord. N1400, W3250

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

TEST INSTRUMENT: Troxler, 3430, 27459

REMARKS:

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

- A. TEST RESULTS COMPLY WITH SPECIFICATIONS
- B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
- C. RETEST OF PREVIOUS TEST
- D. MOISTURE IN EXCESS OF SPECIFICATION
- E. MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 688 D: 3145
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 01:30 pm - 07:00 pm

Respectfully submitted,
Professional Service Industries,

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 08, 1997

OUR REPORT NO.: 130-70040-44

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% M:
1	6"	652.0	34	113.5	14.1	126.4	110.8	97.6	1 - A
2	6"	650.0	34	113.5	17.3	118.1	100.7	88.7	1 - B - D
3	6"	651.0	34	113.5	13.4	125.4	110.6	97.4	1 - A

TEST LOCATION: CMSD riverfront slope - north side

1	Grid coord. N1250, W3000
2	Grid coord. N1300, W2900
3	Grid coord. N1250, W2850

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:

DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (34) ASTM D-698

TEST INSTRUMENT: Troxler, 3430, 27459

REMARKS:

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

- A. TEST RESULTS COMPLY WITH SPECIFICATION
- B. PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
- C. RETEST OF PREVIOUS TEST
- D. MOISTURE IN EXCESS OF SPECIFICATIONS
- E. MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 701 D: 3128
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 09:30 am - 03:00 pm

Respectfully submitted,
Professional Service Industries, Inc.

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: September 09, 1997

OUR REPORT NO.: 130-70040-45

TEST DATA: (34) Light Brown, Lean, Sandy CLAY, Trace Gravel (CL) OPT. MOIST. = 14.5%

TEST NO.	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS* Spec. 95% Mi
1	6"	652	34	113.5	16.5	125.6	107.8	95.0	1 - A - C
2	6"	650	34	113.5	15.0	130.2	113.2	99.7	1 - A
3	6"	649	34	113.5	16.3	125.4	107.8	95.0	1 - A
4	6"	644	34	113.5	16.0	127.7	110.1	97.0	1 - A

TEST LOCATION: CMSD riverfront slope - south end

1	Grid coord. N 1250, W 3000 (retest of test #2 from 9-8-97)
2	Grid coord. N 1250, W 3050
3	Grid coord. N 1200, W 3150
4	Grid coord. N 1150, W 3250

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS: 1. FILL MATERIAL
DENSITIES SHOWN: Lbs. per cubic foot 2. BACKFILL
WATER CONTENT: Percent of dry weight 3. BASE COURSE
PERCENT COMPACTION: Based on maximum dry 4. SUBBASE
density obtained on sample indicated by 5. SOIL CEMENT
soil ID number. 6. OTHER

* (34) ASTM D-698

TEST INSTRUMENT: Troxler, 3430, 27459

REMARKS:

STANDARD COUNT M: 702 D: 3140
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 09:30 am - 03:00 pm

Respectfully submitted,
Professional Service Industries, Inc.

THESE TEST RESULTS APPLY ONLY TO THE SPECIFIC LOCATIONS NOTED AND MAY NOT REPRESENT ANY OTHER LOCATIONS OR ELEVATIONS.
REPORTS MAY NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION BY PROFESSIONAL SERVICE INDUSTRIES, INC.

Information To Build On



REPORT OF FIELD COMPACTION TESTS

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: April 29, 1998

OUR REPORT NO: 130-70040-59

TEST DATA: (52) Brown, Clayey SILT, Little Fine Sand, Trace Shale Fragments OPT. MOIST. = 18.0%

TEST NO	TEST DEPTH	ELEVATION	SOIL ID NUMBER	MAXIMUM LAB DRY DENSITY *	WATER CONTENT	WET DENSITY	DRY DENSITY	PERCENT COMPACTION	COMMENTS*	
									Spec.	95% Min
1	6"	669.36	52	107.0	19.0	125.2	105.2	98.3	1 - A	
2	6"	668.41	52	107.0	19.3	127.8	107.1	100.1	1 - A	
3	6"	670.10	52	107.0	19.1	124.5	104.5	97.7	1 - A	

TEST LOCATION: TSCA overlay

- 1 Grid coordinates W3025, N1375
- 2 Grid coordinates W3025, N1500 (retest of test #2 on 4-27-98)
- 3 Grid coordinates W2975, N1475

NOTES: TESTS PERFORMED PER ASTM D2922-91 & ASTM D3017-88(93) *COMMENTS:
DENSITIES SHOWN: Lbs. per cubic foot
WATER CONTENT: Percent of dry weight
PERCENT COMPACTION: Based on maximum dry density obtained on sample indicated by soil ID number.

* (52) ASTM D-698

TEST INSTRUMENT: Troxler, 3430, 27459

REMARKS: SURFACES NOTED TO BE PUMPING DUE TO UNDERLYING REFUSE LAYERS.

1. FILL MATERIAL
2. BACKFILL
3. BASE COURSE
4. SUBBASE
5. SOIL CEMENT
6. OTHER

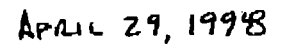
- A TEST RESULTS COMPLY WITH SPECIFICATION
- B PERCENT COMPACTION DOES NOT COMPLY WITH SPECIFICATIONS
- C RETEST OF PREVIOUS TEST
- D MOISTURE IN EXCESS OF SPECIFICATIONS
- E MOISTURE BELOW SPECIFICATIONS

STANDARD COUNT M: 692 D: 3071
ADJUSTMENT DATA M: D:

TECHNICIAN: Dave Pickens
TIME: 12:30 pm - 04:30 pm

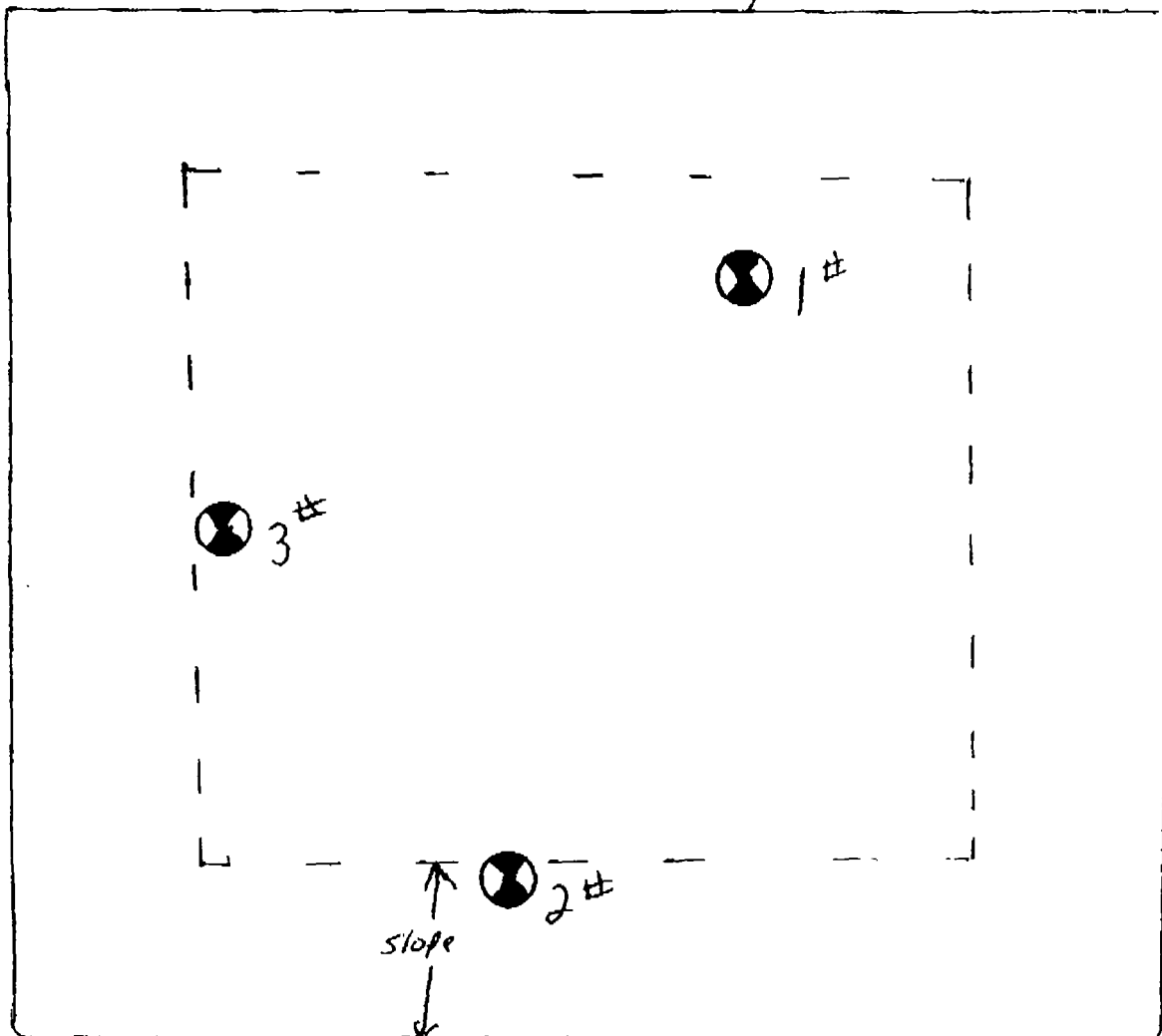
Respectfully submitted,
Professional Service Industries, Inc

THESE TEST RESULTS APPLY ONLY TO THE SPECIFIC LOCATIONS NOTED AND MAY NOT REPRESENT ANY OTHER LOCATIONS OR ELEVATIONS.
REPORTS MAY NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION BY PROFESSIONAL SERVICE INDUSTRIES, INC.



Ohio River

TSCA
CAP



Information to Build On

September 2, 1997

O'Brien & Gere Technical Services, Inc.
5000 Brittonfield Parkway
P.O. Box 5240
Syracuse, NY 13057
Attn: Mr. Anthony Geiss

Re: Ormet Primary Aluminum Corporation
Superfund Site
Hannibal, OH
PSI Project No. 130-70040
Summary Report No. 2

Dear Mr. Geiss:

In accordance with the project specifications, Professional Service Industries, Inc. (PSI) is please to provide the following summary of construction testing to date of fill materials placed at the reference project site. The summary reflects testing performed between August 12 and August 29, 1997.

Outfall 004 Trapezoidal Flume

Unconfined compressive strength tests were estimated through the performance of calibrated penetrometer tests performed at plan bearing elevations for the Trapezoidal Flume foundation on August 12, 1997 (see attached PSI Report No. 130-70040-40). Tests indicated undrained shear strengths in excess of the minimum required to achieve the 1000 PSF bearing capacity requirements.

PSI was not requested to perform field services between August 12 and August 29, 1997 other than those services discussed above. Please contact us if there are any questions regarding the information provided herein.

Very truly yours,
Professional Service Industries, Inc.

Stephen M. Simonette

Stephen M. Simonette
Branch Manager



Paul S. Hundley

Paul S. Hundley, P.E.
District Manager

Enclosures

Information To Build On

DAILY FIELD REPORT

TESTED FOR: TONY GEISS
OBRIEN & GERE TECHNICAL SERV.
5000 BRITTONFIELD PARKWAY
SUITE 300
SYRACUSE, NY 13221

PROJECT: ORMET SUPERFUND SITE
HANNIBAL, OH

DATE: August 12, 1997

OUR REPORT NO.: 130-70040-40

WEATHER: Partly cloudy

TEMPERATURE RANGE: 92 TO: 92

TIME: 12:00 pm - 06:00 p

INSPECTOR: Steve Simonette

TYPE OF INSPECTION BEING PERFORMED

☒ SOILS

☐ CONCRETE

☒ FOUNDATIONS

☐ BATCH PLANT

☐ CONTROLLED FILL (COMPACTION)

☐ PLACEMENT (JOB SITE)

☐ ASPHALT

☐ OTHER

☐ BATCH PLANT

☐ PLACEMENT (JOB SITE)

BRIEF RESUME OF WORK ACCOMPLISHED THIS DATE:

On this date, compressive strength tests were performed on Outfall 004 Trapezoidal Flume foundation subgrades. Compressive strength tests were performed using a hand penetrometer with results indicating strengths in excess of the 1000 PSF project specifications.

Respectfully submitted,
Professional Service Industries, Inc.

APPENDIX B

MONITORING WELL ABANDONMENT DOCUMENTATION



PRIMARY ALUMINUM
CORPORATION

September 22, 1997

Ohio Department of Natural Resources
Division of Water
1939 Fountain Square Drive
Columbus, OH 43224-9971

Dear Sirs:

Attached are water well sealing reports for four monitoring wells plugged and abandoned on Ormet's property in Monroe County, Ohio.

If you have any questions please contact me at 614-483-2659.

Sincerely,

John Reggi, Director
Corporate Environmental Services

cc: S. C. Menosky, HMI, Inc. wo/att.
Anthony Rutter, USEPA wo/att.

WATER WELL SEALING REPORT
OHIO DEPARTMENT OF NATURAL RESOURCES
Division of Water
1939 Fountain Square Drive
Columbus, Ohio 43224-9971
Voice: (614) 265-6739 Fax: (614) 447-9503

0103832

LOCATION

County MONROE Township OHIO Section/Lot Number _____
Owner/Builder ORMET CORPORATION REDUCTION DIVISION
Circle One or Both
Address of Well Location P.O. BOX 176 STATE ROUTE 7
Number Street Name
City HANNIBAL Zip Code +4 43931
4.5 miles NORTH of STATE ROUTE 7 AND NEW MARTINSVILLE BRIDGE
n, e, s, w nearest intersection
Property Location
Description on the EAST side of STATE ROUTE 7
n, e, s, w road name

Location of Well in State Plane N ☐
Coordinates, if available S ☐ X ☐ Y ☐
ft. or m ft. or m
Elevation of Well 653.22 +/- Datum Plain: ☐ NAD27 ☐ NAD83
Source of Coordinates: ☐ GPS ☐ Survey ☐ Other _____

ORIGINAL WELL ODNR Well Log Number N/A (MW-33D) Copy attached? (circle one) Yes or No

MEASURED CONSTRUCTION DETAILS Date of measurements 4-21-86
Depth of Well 84.5 FEET Static Water Level 35.71 FEET
Casing 2.0 INCH PVC Length of casing 86.5 FEET
Well Condition GOOD

SEALING PROCEDURE
Method of Placement OVERDRILL WELL WITH 4 1/4" ID AUGERS; TREMIE FROM BOTTOM, BENTONITE GROUT

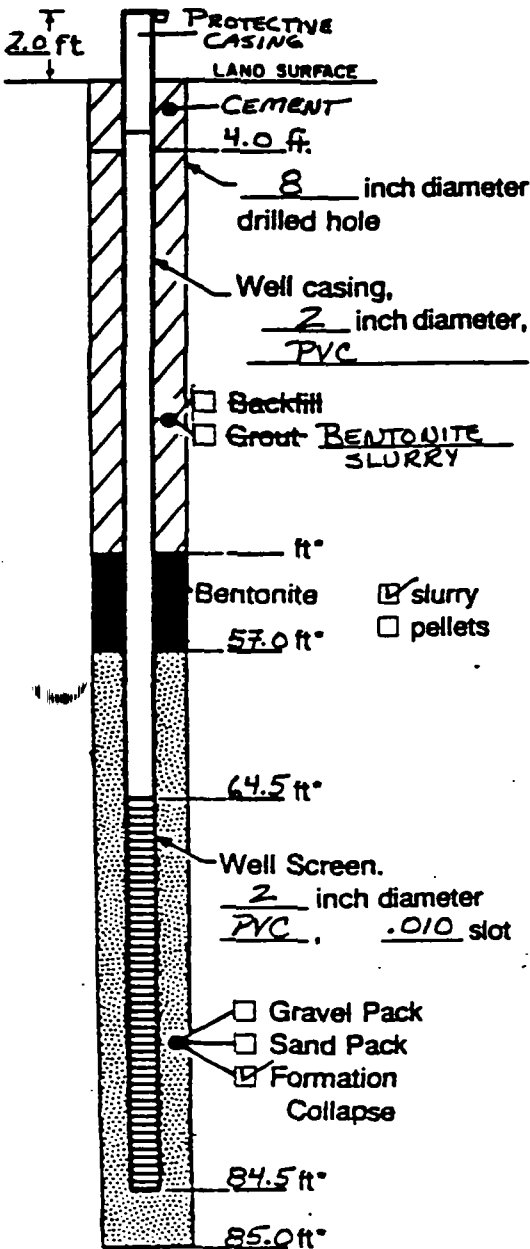
		Sealing Material	Volume
Placement:	From <u>85.0 FEET</u> To <u>4.0 FEET</u>	<u>BENTONITE GROUT</u>	<u>220 GALLONS</u>
	From <u>4.0 FEET</u> To <u>2.0 FEET</u>	<u>BENTONITE CHIPS</u>	<u>2 x 50lb. BAGS</u>
	From <u>2.0 FEET</u> To <u>0 FEET</u>	<u>QUICKRETE / CEMENT</u>	<u>2 x 80lb. BAGS</u>

Was Casing Removed? (Yes) or No
(circle one)
Condition of Casing GOOD
Perforations: From 84.5 FEET To 64.5 FEET
From _____ To _____

Date Sealing Performed APRIL 30, 1997
Reason(s) for Sealing REMEDIAL ACTIVITIES

CONTRACTOR
Name HYDROSYSTEMS MANAGEMENT INC. ODH Registration # N/A
Address 331 S MAIN STREET
City/State/Zip WASHINGTON PA 15301
Signature Stephen C. Menosky
I hereby certify the information given is accurate and correct to the best of my knowledge.

WELL CONSTRUCTION LOG



Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project ORMET/ROZ38H06 Well MW-33D
Town/City HANNIBAL
County MONROE State OHIO
Permit No. _____
Land-Surface Elevation and Datum 651.15 feet ☒ surveyed ☐ estimated
MSL
Installation Dates(s) 4-20-86/4-21-86
Drilling Method 3 1/4" I.D. HSA
Drilling Contractor H.C. NUTTING
Drilling Fluid CLEAN WATER FROM SANITARY SUPPLY
USED BELOW 48.0'
Development Techniques(s) and Date(s)
AIRLIFT SYSTEM 5-9-86
Fluid Loss During Drilling _____ gallons
Water Removed During Development 210 gallons
Static Depth to Water 35.71 (T.O.P.) feet below M.P.
Pumping Depth to Water _____ feet below M.P.
Pumping Duration 1 hours
Yield 3.5 gpm Date 5-9-86
Specific Capacity _____ gpm/ft
Well Purpose DEEP GROUND-WATER MONITORING
WELL

Remarks

Prepared by R.L. FARGO

WATER WELL SEALING REPORT
OHIO DEPARTMENT OF NATURAL RESOURCES
Division of Water
1939 Fountain Square Drive
Columbus, Ohio 43224-9971
Voice: (614) 265-6739 Fax: (614) 447-9503

0103833

LOCATION

County MONROE Township OHIO Section/Lot Number _____
Owner/Builder ORMET CORPORATION REDUCTION DIVISION
Address of Well Location P.O. Box 1716 STATE ROUTE 7
City HANNIBAL Zip Code +4 43931
Property Location 4.5 miles NORTH of STATE ROUTE 7 AND NEW MARTINSVILLE BRIDGE
Description on the EAST side of STATE ROUTE 7
Location of Well in State Plane N ☐ S ☐ X ☐ Y ☐
Coordinates, if available 653.24 +/- ft. or m ft. or m
Elevation of Well 653.24 +/- ft. or m Datum Plain: ☐ NAD27 ☐ NAD83
Source of Coordinates: ☐ GPS ☐ Survey ☐ Other _____
ORIGINAL WELL ODNR Well Log Number N/A (MW-335) Copy attached? (Yes) or No

MEASURED CONSTRUCTION DETAILS Date of measurements 4-22-86

Depth of Well 62.5 FEET Static Water Level 34.54 FEET
Size of Casing 2.0 INCH PVC Length of casing 64.5 FEET
Well Condition GOOD

SEALING PROCEDURE

Method of Placement OVERDRILL WELL WITH 4 1/4" ID. AUGERS; TREMIE FROM BOTTOM, BENTONITE GROUT

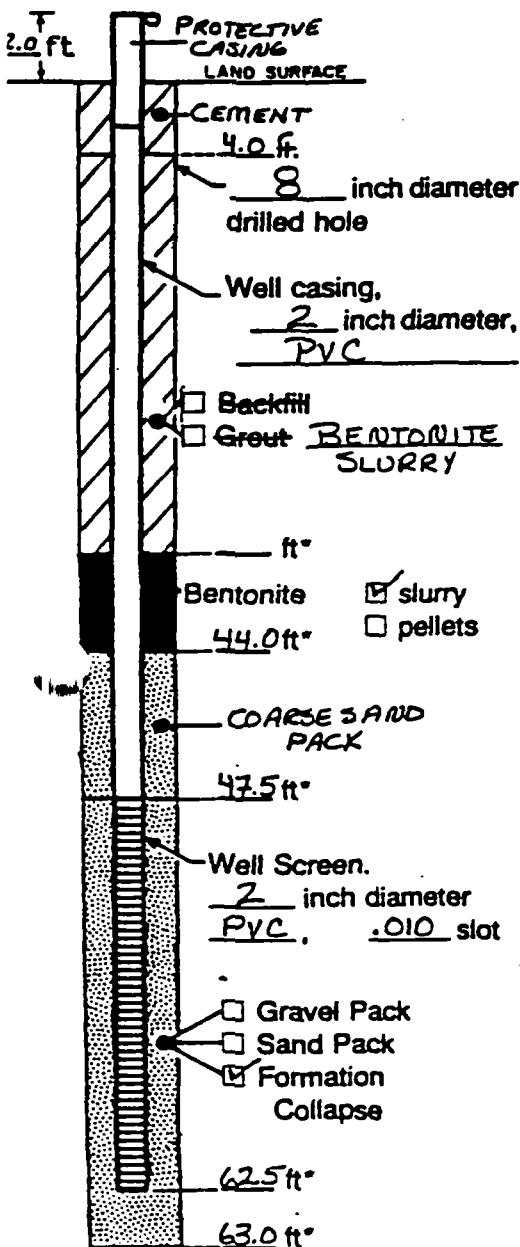
Placement:	From	To	Sealing Material	Volume
	<u>64.0 FEET</u>	<u>2.0 FEET</u>	<u>BENTONITE GROUT</u>	<u>150 GALLONS</u>
	<u>2.0 FEET</u>	<u>0 FEET</u>	<u>QUICKRETE/CEMENT</u>	<u>2 x 80lb. BAGS</u>

Was Casing Removed? (Yes) or No
Condition of Casing GOOD
Perforations: From 62.5 FEET To 47.5 FEET
Date Sealing Performed APRIL 30, 1997
Reason(s) for Sealing REMEDIAL ACTIVITIES

CONTRACTOR

Name HYDROSYSTEMS MANAGEMENT INC. ODH Registration # N/A
Address 331 S. MAIN STREET
City/State/Zip WASHINGTON PA 15301
Signature Stephen C. Monosky
I hereby certify the information given is accurate and correct to the best of my knowledge.

WELL CONSTRUCTION LOG



Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project ORMET/RO738H06 Well MW-335
 Town/City HANNIBAL
 County MONROE State OHIO
 Permit No. _____
 Land-Surface Elevation and Datum 651.26 feet ☒ surveyed
MSL ☐ estimated
 Installation Dates(s) 4-21-86/4-22-86
 Drilling Method 3 1/4" I.D. HSA
 Drilling Contractor H.C. NUTTING
 Drilling Fluid CLEAN WATER FROM SANITARY SUPPLY
USED BELOW 45.0'
 Development Techniques(s) and Date(s)
AIRLIFT SYSTEM 5-9-86
 Fluid Loss During Drilling _____ gallons
 Water Removed During Development 90 gallons
 Static Depth to Water 34.54 (T.O.P.) feet below M.P.
 Pumping Depth to Water _____ feet below M.P.
 Pumping Duration 1 hours
 Yield 1.5 gpm Date 5-9-86
 Specific Capacity _____ gpm/ft
 Well Purpose SHALLOW GROUND-WATER
MONITORING WELL

Remarks FORMATION COLLAPSE TO WATER
TABLE AT ±48.0'. COARSE SAND INSTALLED
TO 3.5' ABOVE SCREEN.

Prepared by R.L. FARGO

WATER WELL SEALING REPORT
OHIO DEPARTMENT OF NATURAL RESOURCES
Division of Water
1939 Fountain Square Drive
Columbus, Ohio 43224-9971
Voice: (614) 265-6739 Fax: (614) 447-9503

0103834

LOCATION

County MONROE Township OHIO Section/Lot Number _____
Owner/Builder ORMET CORPORATION REDUCTION DIVISION
Circle One or Both
Address of Well Location P.O. BOX 176 STATE ROUTE 7
Number Street Name
City HANNIBAL Zip Code +4 43931
4.5 miles NORTH of ROUTE 7 AND NEW MARTINSVILLE BRIDGE
n, e, s, w nearest intersection
Property Location
Description on the EAST side of STATE ROUTE 7
n, e, s, w road name

Location of Well in State Plane N ☐
Coordinates, if available S ☐ X ☐ Y ☐
ft. or m ft. or m

Elevation of Well 633.68 +/- Datum Plain: ☐ NAD27 ☐ NAD83

Source of Coordinates: ☐ GPS ☐ Survey ☐ Other _____

ORIGINAL WELL ODNR Well Log Number N/A (MW-435) Copy attached? (Yes) or No

MEASURED CONSTRUCTION DETAILSDate of measurements 3-3-88

Depth of Well 41.6 FEET Static Water Level 19.90 FEET
Size of Casing 2.0 INCH PVC Length of casing 43.42 FEET
Well Condition GOOD

SEALING PROCEDUREMethod of Placement OVERDRILL WELL WITH 4 1/4" ID. AUGERS; TREMIE FROM BOTTOM, BENTONITE GROUT

		Sealing Material	Volume
Placement:	From <u>44.0 FEET</u> To <u>4.0 FEET</u>	<u>BENTONITE GROUT</u>	<u>60 GALLONS</u>
	From <u>4.0 FEET</u> To <u>2.0 FEET</u>	<u>BENTONITE CHIPS</u>	<u>2 x 50 lb. BAGS</u>
	From <u>2.0 FEET</u> To <u>0 FEET</u>	<u>QUICKRETE/ CEMENT</u>	<u>2 x 80 lb. BAGS</u>

Vas Casing Removed? (Yes) or No
(circle one)

Condition of Casing GOOD
Perforations: From 41.6 FEET To 31.6 FEET
From _____ To _____

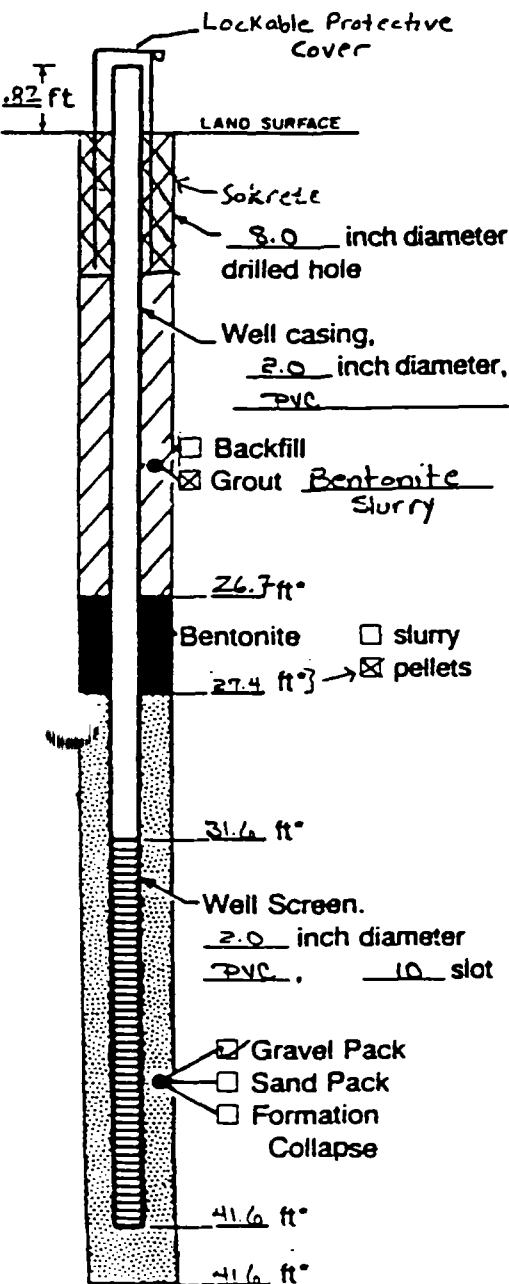
Date Sealing Performed APRIL 29, 1997
Reason(s) for Sealing REMEDIAL ACTIVITIES

CONTRACTOR

Name HYDROSYSTEMS MANAGEMENT INC. ODH Registration # N/A
Address 331 S. MAIN STREET
City, State/Zip WASHINGTON PA 15301

Signature Stephany C. Monosky
I hereby certify the information given is accurate and correct to the best of my knowledge.

WELL CONSTRUCTION LOG



Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below and Surface

Project R0738H08 Well MW-435
 Town/City HANNIBAL
 County MONROE State OHIO
 Permit No. _____
 Land-Surface Elevation and Datum 631.86 feet ☒ surveyed ☐ estimated
 Installation Dates(s) 3/3/88
 Drilling Method Hollow stem auger
 Drilling Contractor Pennsylvania Drilling
 Drilling Fluid None - water used to flush out flowing sands encountered below the water table
 Development Techniques(s) and Date(s) AIRLIFT 6/9/88
 Fluid Loss During Drilling _____ gallons
 Water Removed During Development 130 gallons
 Static Depth to Water _____ feet below M.P.
 Pumping Depth to Water _____ feet below M.P.
 Pumping Duration _____ hours
 Yield _____ gpm Date _____
 Specific Capacity _____ gpm/ft
 Well Purpose Shallow ground-water monitoring well

Remarks

Prepared by R. Wells

WATER WELL SEALING REPORT
OHIO DEPARTMENT OF NATURAL RESOURCES
 Division of Water
 1939 Fountain Square Drive
 Columbus, Ohio 43224-9971
 Voice: (614) 265-6739 Fax: (614) 447-9503

0103835

LOCATION

County MONROE Township OHIO Section/Lot Number _____
 Owner/Builder ORMET CORPORATION REDUCTION DIVISION
 Address of Well Location P.O. BOX 176 STATE ROUTE 7
 City HANNIBAL Zip Code +4 43931
4.5 miles NORTH of ROUTE 7 AND NEW MARTINSVILLE BRIDGE
 Property Location Description on the EAST side of STATE ROUTE 7
 on the _____ side of _____ road name

Location of Well in State Plane N ☐ S ☐ X ☐ Y ☐
 Coordinates, if available _____ ft. or m _____ ft. or m
 Elevation of Well 633.12 +/- _____ Datum Plain: ☐ NAD27 ☐ NAD83

Source of Coordinates: ☐ GPS ☐ Survey ☐ Other _____
 ORIGINAL WELL ODNR Well Log Number N/A (MW-43D) Copy attached? (Yes) or No

MEASURED CONSTRUCTION DETAILS

Date of measurements 3-3-88

Depth of Well 64.0 FEET Static Water Level 19.35 FEET
 Size of casing 2.0 INCH PVC Length of casing 65.66 FEET
 Well Condition GOOD

SEALING PROCEDURE

Method of Placement OVERDRILL WELL WITH 4 1/4" I.D. AUGERS ; TREMIE FROM BOTTOM BENTONITE GROUT

Placement:	From	To	Sealing Material	Volume
	<u>64.5 FEET</u>	<u>4.0 FEET</u>	<u>BENTONITE GROUT</u>	<u>150 GALLONS</u>
	<u>4.0 FEET</u>	<u>2.0 FEET</u>	<u>BENTONITE CHIPS</u>	<u>2 X 50lb. BAGS</u>
	<u>2.0 FEET</u>	<u>0 FEET</u>	<u>QUICKRETE/CEMENT</u>	<u>2 X 80lb. BAGS</u>

Was Casing Removed? (Yes) or No
 (circle one)

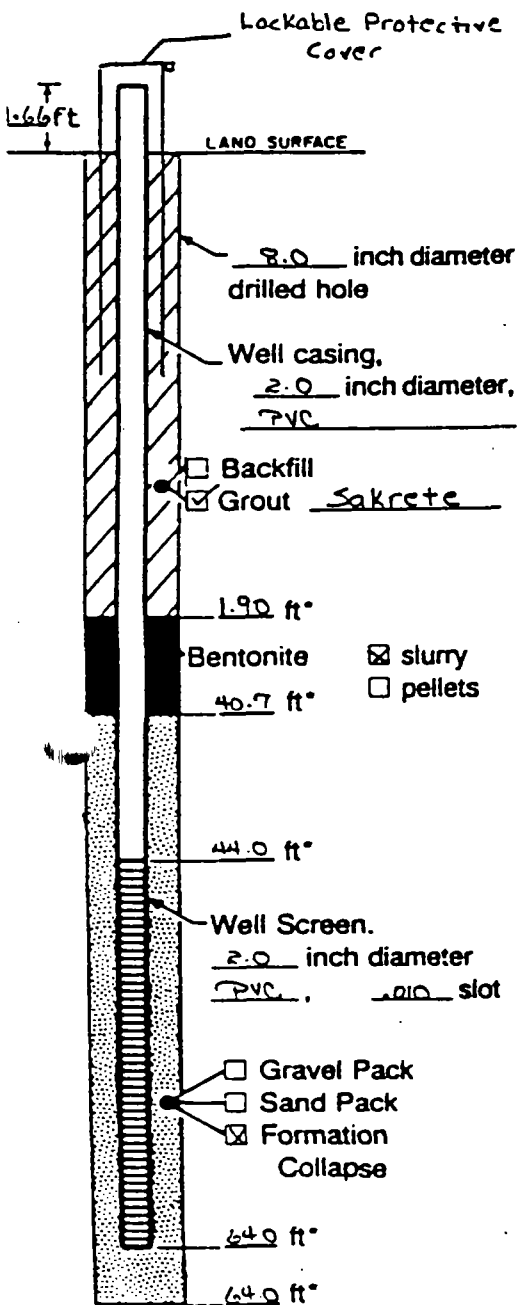
Condition of Casing GOOD
 Perforations: From 64.0 FEET To 44.0 FEET
 From _____ To _____

Date Sealing Performed APRIL 29, 1997
 Reason(s) for Sealing REMEDIAL ACTIVITIES

CONTRACTOR

Name HYDROSYSTEMS MANAGEMENT INC. ODH Registration # N/A
 Address 331 S. MAIN STREET
 City/Zip WASHINGTON PA 15301
 Signature Stephen C. Menckey
 I hereby certify the information given is accurate and correct to the best of my knowledge.

WELL CONSTRUCTION LOG



Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project R0738 H08 Well MW-43d
 Town/City HANNIBAL
 County MONROE State OHIO
 Permit No. _____
 Land-Surface Elevation and Datum 631.46 feet ☒ surveyed ☐ estimated
 Installation Date(s) 3/2/88 and 3/3/88
 Drilling Method HOLLOW STEM AUGER
 Drilling Contractor PENNSYLVANIA DRILLING
 Drilling Fluid NONE - water used to flush out flowing sands below the water table
 Development Techniques(s) and Date(s) AIRLIFT 6/9/88
 Fluid Loss During Drilling _____ gallons
 Water Removed During Development 450 gallons
 Static Depth to Water 21.10 (6-20-88) feet below M.P.
 Pumping Depth to Water _____ feet below M.P.
 Pumping Duration _____ hours
 Yield _____ gpm Date _____
 Specific Capacity _____ gpm/ft
 Well Purpose Deep ground-water monitoring well

Remarks To avoid bridging problems, pellets were not installed

Prepared by K. Wells

APPENDIX C

VERIFICATION SAMPLING PROGRAM

APPENDIX C
VERIFICATION SAMPLING PROGRAM
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

INTRODUCTION

This appendix has been prepared to describe the verification sampling program implemented during CRDA and Backwater Area removal activities at the Ormet Primary Aluminum Corporation (Ormet Primary) Superfund Site. The program was implemented in accordance with the approved *Construction Quality Assurance Project Plan* dated April, 1997.

VERIFICATION SAMPLING PROCEDURES

To verify that the clean-up levels for the CRDA and Backwater Area were achieved, a verification sampling program was implemented. The overall objective of the verification sampling effort was to determine whether applicable Soil and Sediment Cleanup Standards for the CRDA and Backwater Area have been achieved. This program consisted of the collection of shallow composite samples following completion of excavation in each discrete grid area. The following sections describe the verification sampling methodology, QA/QC sample collection methodology, equipment decontamination procedures, which were implemented as part of the program.

Verification Sampling Methodology

The verification sampling program was implemented by establishing a sampling grid system. Each excavation area was divided into a grid, with each individual grid area not exceeding approximately 2,500 square feet. Although a 50-foot by 50-foot grid area (correlating to the plant grid system) was utilized where possible, the size and shape of each grid area was adjusted as necessary according to encountered field conditions and construction sequencing. A series of sample aliquots, typically representing up to a 500 square foot area, were collected from distributed locations within each grid area. In excavation/removal areas that exceeded approximately 3 feet in depth (encountered during Backwater Area excavation), sidewall verification samples were also collected. Each

excavation sidewall was divided (based on encountered field conditions) into areas of

approximately 500 feet or less. Again, a series of sample aliquots was collected, typically representing up to a 100 square feet area, were collected from distributed locations within each grid area. Figure C-1 presents the strategy which was implemented for the location of each collected sample aliquot. Following collection, the aliquots were composited in the field to form a single sample representative of each grid area for polychlorinated biphenyl (PCB) and/or carcinogenic polynuclear aromatic hydrocarbon (PAH) analysis. If the verification sample analytical results exceeded the applicable Cleanup Standards, additional excavation/removal was performed to remove additional sediment and/or soil. A summary of applicable soil and sediment Cleanup Standards for the CRDA and Backwater Area are provided in Table C-1.

Each surficial soil sample was collected using a decontaminated stainless steel scoop or similar device. Prior to sampling, the uppermost portion of the sampling area was scraped using a disposal wood scraper to minimize the potential for cross-contamination. Equal-portion sample aliquots were transferred directly from the stainless steel scoop to a pre-cleaned stainless steel bowl. In the bowl, the sample aliquots were mixed in order to provide a homogeneous representative sample. The representative sample were then transferred directly to a laboratory-supplied sample container with a Teflon-lined lid. Samples were placed in a cooler, packed with ice, and transported to the analytical laboratory. All samples were shipped under chain-of-custody (COC) procedures.

QA/QC Sample Collection

Equipment wash blanks and duplicate samples were utilized during implementation of the verification sampling program to provide a mechanism for control and evaluation of the accuracy and precision of the obtained samples.

Equipment wash blanks provided a check for procedural contamination (effectiveness of field decontamination procedures) and/or ambient conditions at the site that may have caused sample contamination. During verification sampling activities, one equipment wash blank, using the final rinsate from the decontamination procedures, was generally collected and forwarded to the laboratory with each sample shipment. The equipment wash blanks were analyzed for the same parameter(s) as the associated samples. A summary of the equipment wash blank analytical results are provided in Table C-2.

Field duplicates were also analyzed for the same parameters as the associated samples to allow an evaluation of sample reproducibility. One blind duplicate samples was prepared for approximately every ten soil and sediment samples collected during the implementation of the verification sampling program for the CRDA and Backwater Area. The blind duplicates were "split" from the collected and composited grid area sample. The blind duplicate samples were identified with no indication as to which actual sample serves as its match. These duplicate samples were used to allow an evaluation of sample reproducibility.

Equipment Decontamination Procedure

Equipment decontamination procedures were implemented to minimize the potential for cross-contamination of the collection samples. Sampling equipment (i.e., sampling scoops, compositing bowls, etc.) which came into direct contact with environmental samples was decontaminated as follows:

- Clean with tap water and laboratory detergent using a brush, if necessary, to remove particulate matter and surface films,
- Rinse thoroughly with tap water,
- Rinse thoroughly with distilled water,
- Air dry, as practical, and
- Wrap small pieces of equipment in aluminum foil (or plastic bags) for transportation or storage.

LABORATORY ANALYSES

Laboratory analytical services were provided by Kemron Environmental Services (Kemron) of Marietta, Ohio. All samples collected were analyzed in accordance with the EPA Test Methods for Evaluating Solid Waste, SW-846, Third Edition, November, 1986. Each soil or sediment sample was extracted using Test Method 3550. Subsequently, PCB analysis was performed on the extract sampling using Test Method 8081 and/or PAH analysis was performed on the extract sample using Test Method 8270. Final CRDA and Backwater Area verification sample analytical results are summarized on Tables C-2 through C-5. Equipment Wash Blank analytical results are summarized on Table C-6. The

final verification sample laboratory analytical summary reports are included in Attachment C-1.

QUALITY ASSURANCE/QUALITY CONTROL

In accordance with the Quality Assurance Project Plan (QAPP) and Laboratory Quality Assurance Plan (Laboratory QAP), laboratory results were reviewed to assess (1) their compliance with the Laboratory QAP, and (2) the quality and usability of the data. Laboratory data was evaluated utilizing procedures presented in the *U.S. EPA Contract Laboratory Program's National Functional Guidelines for Organic Data Review* (February 1994).

One minor quality assurance deficiency was noted with respect to the temperatures of a few coolers received by the laboratory. During implementation of the sampling activities, three coolers containing final verification samples arrived at the laboratory at temperatures slightly exceeding 6 degrees Celsius. Samples associated with these coolers are flagged on the attached tables C-2 and C-3. This condition is believed to be related to sampling during very warm summer weather, and the site's close proximity to the laboratory. This issue was discussed with U.S. EPA oversight contractor representatives during site meetings, and this condition is not believed to have significantly affected the quality or usability of the data.

All analyses were completed with recommended sample holding times. All surrogate, matrix spike, and laboratory control sample results were within control limits. No target compounds were detected in any laboratory blanks.

TABLE C-1

SUMMARY OF VERIFICATION SAMPLING ANALYTICAL METHODS AND
CLEANUP STANDARDS FOR THE CRDA AND BACKWATER AREA

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Constituent	Analytical Method	Backwater Area Sediment Cleanup Standard (µg/kg)	CRDA Soil Cleanup Standard (µg/kg)
Carcinogenic PAHs, Total	SW-846 Method 8270	60,000	60,000
Benzo(a)Anthracene			
Benzo(b)Fluoranthene			
Benzo(k)Fluoranthene			
Benzo(g,h,i)Perylene			
Benzo(a)Pyrene			
Indeno(1,2,3-cd)Pyrene			
Dibenz(a,h)Anthracene			
Chrysene			
Polychlorinated Biphenyls	SW-846 Method 8081	1,000	1,000 or 10,000 (1)

Notes:

- 1 This value is an alternate CRDA Soil Cleanup Standard, petitioned for use by Ormet Primary based upon additional control (soil cover) and industrial land use scenarios.

TABLE C-2

SUMMARY OF CRDA STAGE I VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)
SS-1	SS-1	5/20/97	ND
SS-2	SS-2	5/23/97	ND
SS-3	SS-3	5/29/97	0.047
SS-4	SS-4	5/29/97	1.4
SS-5	SS-5A	6/5/97	4.7
SS-6	SS-6A	6/5/97	1.9
SS-7	SS-7	5/29/97	7.7
SS-8	SS-8A*	6/11/97	5.2
SS-9	SS-9A*	6/11/97	5.4
SS-10	SS-10A*	6/11/97	13
SS-11	SS-11	5/30/97	3.4
SS-12	SS-12*	6/30/97	0.26 0.25(D)
SS-13	SS-13A	6/18/97	0.14
SS-14	SS-14	6/12/97	6.5
SS-15	SS-15A	6/17/97	20
SS-16	SS-16B*	6/30/97	2.5
SS-17	SS-17B	6/27/97	5.2

Notes:

ND - Not detected

(D) - Denotes duplicate sample result

* Indicates sample temperature exceeded 6 degrees C at time of laboratory acceptance.

TABLE C-3
SUMMARY OF CRDA STAGE II VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)
SS-18	SS-18	6/17/97	0.2	30.5
SS-19	SS-19	6/19/97	0.18	27.7
SS-20	SS-20, SS-120	6/19/97, 7/17/97	0.2	3.22
SS-21	SS-21	7/2/97	0.048	43.3
SS-22	SS-122	7/17/97	0.038	3.17
SS-23	SS-123	7/17/97	0.19	5.38
SS-24	SS-24	6/19/97	0.13	50.7
SS-25	SS-125	7/17/97	0.028	1.39
SS-26	SS-26, SS-126	6/25/97, 7/17/97	0.57	0.43
SS-27	SS-27, SS-127	6/25/97, 7/17/97	0.7	2.06
SS-28	SS-28, SS-128	6/25/97, 7/17/97	0.66	1.2
SS-29	SS-29, SS-129	6/25/97, 7/17/97	0.21	2.4
SS-30	SS-30, SS-130	6/25/97, 7/17/97	0.17	1.61
SS-31	SS-31, SS-131	6/25/97, 7/17/97	0.71	2.22
SS-32	SS-32, SS-132	6/25/97, 7/17/97	0.26	2.39
SS-33	SS-33, SS-133	6/25/97, 7/17/97	0.081	0.18
SS-34	SS-34, SS-134	6/25/97, 7/17/97	0.096	ND
SS-35	SS-35, SS-135	6/25/97, 7/17/97	0.28 0.33 (D)	49.51
SS-36	SS-36, SS-136	6/25/97, 7/17/97	0.1	53.62

TABLE C-3

SUMMARY OF CRDA STAGE II VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)
SS-37	SS-37, SS-137	6/25/97, 7/17/97	0.096	32.34
SS-38	SS-38, SS-138	6/25/97, 7/17/97	0.025	0.85
SS-39	SS-39, SS-139	6/25/97, 7/17/97	0.31	ND
SS-40	SS-40, SS-140	6/25/97, 7/17/97	0.31	5.1
SS-43	SS-143	7/17/97	ND	1.52
SS-44	SS-44*	6/27/97	0.51 0.67 (D)	38.2 44.5 (D)
SS-45	SS-45	7/2/97	0.58	17.98
SS-46	SS-46	7/2/97	0.74	16.09
SS-47	SS-47, SS-147	7/2/97, 7/17/97	0.13	14.17
SS-48	SS-48, SS-148	7/2/97, 7/17/97	0.11 0.096(D)	28.4 37.3 (D)
SS-50	SS-50, SS-150	7/9/97, 7/17/97	0.095	7.01
SS-51	SS-51, SS-151	7/9/97, 7/17/97	0.056	0.53
SS-52	SS-52	7/2/97	0.071	16.39
SS-53	SS-53	7/2/97	0.047 0.044 (D)	17.24 18.97 (D)
SS-54	SS-54, SS-154	7/9/97, 7/17/97	0.16	2.32
SS-56	SS-56, SS-156	7/9/97, 7/17/97	0.051	21.5 16.93 (D)
SS-57	SS-57	7/2/97	0.16	22.57
SS-58	SS-58	7/3/97	0.21	20.15

TABLE C-3
SUMMARY OF CRDA STAGE II VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)
SS-59	SS-59, SS-159	7/3/97, 7/17/97	0.47	0.85
SS-60	SS-60	7/3/97	0.078	14.37
SS-61	SS-61	7/3/97	0.42	6.82
SS-62	SS-62, SS-162	7/3/97, 7/17/97	0.021 ND (D)	28.8
SS-63	SS-63	7/8/97	0.51	8.63
SS-64	SS-64	7/8/97	0.024	2.52
SS-65	SS-65	7/9/97	ND	8.13
SS-66	SS-66	7/3/97	0.22	40.9

Notes:

ND - Not detected

(D) - Denotes duplicate sample result

* Indicates sample temperature exceeded 6 degrees C at time of laboratory acceptance.

TABLE C-4

SUMMARY OF CRDA STAGE III VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)
SS-41	SS-41	6/27/97	0.83 0.91 (D)	4.97 3.93 (D)
SS-42	SS-42	6/27/97	0.33	10.6
SS-70	SS-70	9/26/97	0.20	2.61
SS-71	SS-71	9/26/97	ND	ND
SS-72	SS-72	9/26/97	ND	1.26
SS-73	SS-73	9/26/97	0.018	11.94
SS-74	SS-74	9/26/97	0.03 0.029 (D)	5.17 21.6 (D)
SS-75	SS-75	10/2/97	5.3	17.28
SS-76	SS-76	10/2/97	0.34	9.97
SS-77	SS-77	10/2/97	0.07	26.3
SS-78	SS-78	10/2/97	1.3	48.2
SS-79	SS-79	10/2/97	0.83 1.0 (D)	12.46 25.37 (D)
SS-80	SS-80, SS-80R-2	10/12/97, 10/13/98	0.37	22.73
SS-81	SS-81R	10/13/97	ND	38.2
SS-86	SS-86	10/31/97	ND	ND

Notes:

ND - Not detected

(D) - Denotes duplicate sample result

TABLE C-5
SUMMARY OF BACKWATER AREA VERIFICATION SAMPLE DATA
ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Grid Area Designation	Sample Identification	Date Collected	Verification Sample PCB Concentration (mg/kg)	Verification Sample PAH Concentration (mg/kg)
SS-82	SS-82	10/24/97	ND	ND
SS-83	SS-83	10/24/97	ND	ND
SS-84(+)	SS-84(+)	10/31/97	ND	ND
SS-85(+)	SS-85(+)	10/31/97	ND	ND
SS-87	SS-87	10/31/97	0.08	ND
SS-88(+)	SS-88(+)	10/31/97	ND ND (D)	ND ND (D)
SS-89	SS-89	10/31/97	ND	ND
SS-90(+)	SS-90(+)	10/31/97	0.04**	ND
SS-91	SS-91	10/31/97	ND	ND
SS-92(+)	SS-92(+)	10/31/97	ND	ND
SS-93(+)	SS-93(+)	10/31/97	ND	ND
SS-94	SS-94	11/17/97	ND	ND
SS-95	SS-95	11/20/97	0.06	ND
SS-96	SS-96	11/23/97	ND	ND
SS-97	SS-97	11/24/97	ND	ND
SS-98	SS-98	11/24/97	ND	ND
SS-99	SS-99	11/24/97	ND	ND
SS-100	SS-100	11/24/97	ND	ND
SS-101	SS-101	11/25/97	ND	ND
SS-102	SS-102	11/25/97	ND	ND
SS-103	SS-103	11/25/97	ND	ND
SS-104A	SS-104A	12/3/97	ND	ND
SS-104B	SS-104B	12/3/97	ND	ND
SS-104C	SS-104C	12/3/97	ND	ND
SS-104D	SS-104D	12/3/97	ND	ND
SS-105	SS-105	12/5/97	ND	ND

Notes:

ND - Not detected

(D) - Denotes duplicate sample result

(+) - Denotes sidewall area/sample

** Indicates result reported on a wet-weight basis due to limited sample volume.

TABLE C-6

SUMMARY OF EQUIPMENT WASH BLANK ANALYTICAL RESULTS

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

Date Collected	Sample Designation	PCB Concentration (µg/l)	PAH Concentration (µg/l)
5/20/97	EW-1	ND	
5/23/97	EW-2	ND	
5/29/97	EW-3	0.60	
5/30/97	EW-4	2.00	
6/11/97	EW-5	ND	
6/19/97	EW-6		ND
6/25/97	EW-7		ND
6/25/97	EW-8		ND
6/30/97	EW-9		ND
7/2/97	EW-10		ND
7/3/97	EW-11		ND
7/8/97	EW-12	ND	
7/9/97	EW-13	ND	
7/17/97	EW-14	ND	
9/26/97	Rinsate	ND	
10/2/97	Rinsate No. 1	ND	
10/2/97	Rinsate No. 2	ND	
10/13/97	Rinsate	ND	ND
10/23/97	Rinsate		ND
10/24/97	Rinsate	ND	ND
10/30/97	Rinsate	ND	ND
10/31/97	Rinsate	ND	ND
11/17/97	Rinsate	ND	ND
11/23/97	Rinsate	ND	

TABLE C-6

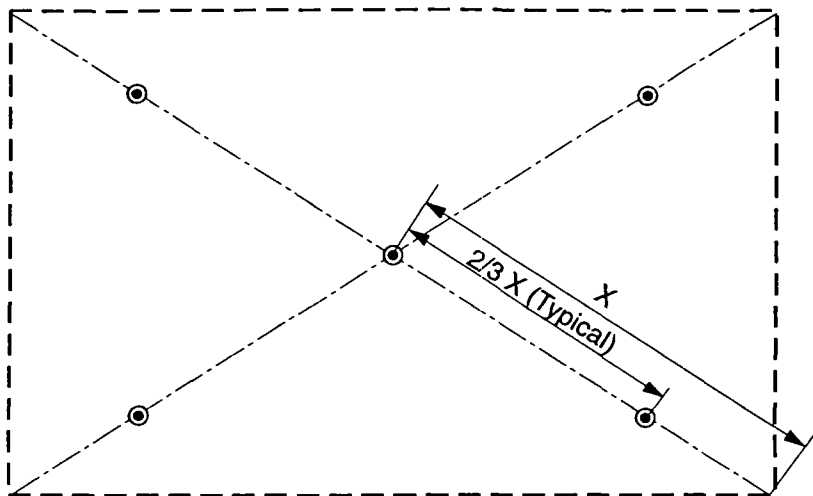
SUMMARY OF EQUIPMENT WASH BLANK ANALYTICAL RESULTS

ORMET PRIMARY ALUMINUM CORPORATION SUPERFUND SITE
HANNIBAL, OHIO

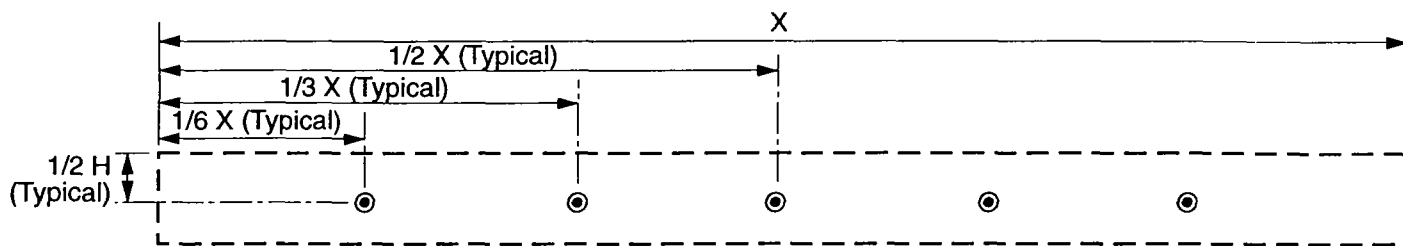
Date Collected	Sample Designation	PCB Concentration (µg/l)	PAH Concentration (µg/l)
11/24/97	Rinsate	ND	ND
11/25/97	Rinsate	ND	ND
12/3/97	Rinsate	ND	ND
12/5/97	Rinsate	ND	
12/6/97	Rinsate		ND

Notes:

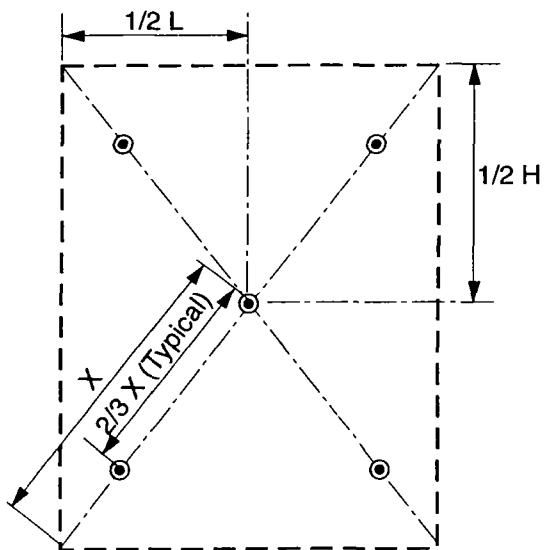
ND-Not Detected



**EXCAVATION BASE GRID AREA
PLAN VIEW**





**SIDEWALL GRID AREA - SHALLOW
PROFILE VIEW**



**SIDEWALL GRID AREA - DEEP
PROFILE VIEW**

LEGEND:

-  Grid Area Limit
-  Sample Aliquot Location



**FIGURE C-1
ALIQOT LOCATION STRATEGY**

ATTACHMENT C-1
VERIFICATION SAMPLE ANALYTICAL DATA SUMMARY REPORTS

ATTACHMENT C-1

Note: The following pages contain analytical data for both verification samples (preliminary and final) and associated equipment wash blank samples. For clarify, sample data not representing final verification sample results (which are summarized in the report) has been deleted by a strike-through.

CRDA STAGE I
VERIFICATION SAMPLE ANALYTICAL DATA SUMMARY REPORTS

Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attention: John Reggi

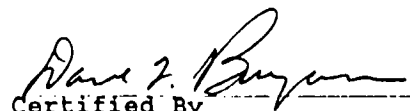
PO Number:
Account Number: ORMET-086

Login #: L9705316
Report Date: 05/22/97
Work ID: ORMET REMEDIATION
Date Received: 05/21/97

SAMPLE IDENTIFICATION

<u>Sample Number</u>	<u>Sample Description</u>	<u>Sample Number</u>	<u>Sample Description</u>
L9705316-01	SS-1	L9705316-02	EW-1

All results on solids/sludges are reported on a dry weight basis, where applicable,
unless otherwise specified. The report shall not be reproduced,
except in full, without the written approval of KEMRON.


Certified By _____
David L. Bumgarner

Login #L, 316
May 22, 1997 02:52 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9705316-01
Client Sample ID: SS-1
Site/Work ID: ORMET REMEDIATION

Matrix: Soil
Collected: 05/20/97 1920

% Solid: 79
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	79		1.0	RJS	05/21/97	D2216-90	N/A

Login #L9(.16
May 22, 1997 02:52 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-W - PCB's (Water)

Lab Sample ID: L9705316-02
Client Sample ID: EW-1
Site/Work ID: ORMET REMEDIATION
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 05/20/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 05/21/97
Analysis Date: 05/22/97

Instrument: HP4
Analyst: ECL
Lab File ID: 040F0101

Method: 8081\3510
Run ID: R25091

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/L		ND	0.50	1
11104-28-2	Aroclor-1221.....	ug/L		ND	0.50	1
11141-16-5	Aroclor-1232.....	ug/L		ND	0.50	1
53469-21-9	Aroclor-1242.....	ug/L		ND	0.50	1
12672-29-6	Aroclor-1248.....	ug/L		ND	0.50	1
11097-69-1	Aroclor-1254.....	ug/L		ND	1.0	1
11096-82-5	Aroclor-1260.....	ug/L		ND	1.0	1

SURROGATES- In Percent Recovery:

Decachlorobiphenyl.....	80.6	(25 - 140%)
2,4,5,6-Tetrachloro-m-xylene.....	82.5	(13 - 154%)



KEMRON Environmental Services
109 Starface Park
Marietta, Ohio 45750
Phone: (614) 373-4071

Ormet Corporation
PO Box 176
Hannibal, OH 43931

Login #: L9705371
Report Date: 05/27/97
Work ID: ORMET REMEDIATION/HANNIBAL, OH
Date Received: 05/23/97

Attention: John Reggi

PO Number:
Account Number: ORMET-086
Invoice Number: 10

SAMPLE IDENTIFICATION

<u>Sample Number</u>	<u>Sample Description</u>	<u>Sample Number</u>	<u>Sample Description</u>
L9705371-01	SS-2		

All results on solids/sludges are reported on a dry weight basis, where applicable,
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except in full, without the written approval of KEMRON.


Certified By
David L. Bumgarner

Login #L9705371
May 27, 1997 03:44 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9705371-01
Client Sample ID: SS-2
Site/Work ID: ORMET REMEDIATION/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 05/23/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 86

TCLP Extract Date: N/A
Extract Date: 05/23/97
Analysis Date: 05/26/97

Instrument: HP1
Analyst: ECL
Lab File ID: 056R0101

Method: 8081\3550
Run ID: R25210

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND	19	33
11104-28-2	Aroclor-1221.....	ug/kg		ND	19	33
11141-16-5	Aroclor-1232.....	ug/kg		ND	19	33
53469-21-9	Aroclor-1242.....	ug/kg		ND	19	33
12672-29-6	Aroclor-1248.....	ug/kg		ND	19	33
11097-69-1	Aroclor-1254.....	ug/kg		ND	38	33
11096-82-5	Aroclor-1260.....	ug/kg		ND	38	33
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	84.6		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	61.6		(29 - 133%)		

Login #L9705371
May 27, 1997 03:44 pm

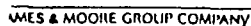
KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9705371-01
Client Sample ID: SS-2
Site/Work ID: ORMET REMEDIATION/HANNIBAL, OH

Matrix: Soil
Collected: 05/23/97 N/A

% Solid: 86
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	86		1.0	DIH	05/27/97	D2216-90	N/A



(513) 651-3440 Fax (513) 651-3452

forms/RECORD

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071

Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

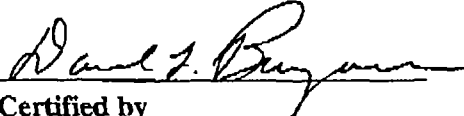
Login #: 97-05-466
Date Received: 05/30/97
Date Completed: 06/02/97
Date Reported: 06/02/97 16:27
Work ID: ORMET REMEDIATION/HANNIBAL, O

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-3	02	SS-4
03	SS-5	04	SS-6
05	SS-7	06	SS-8
07	SS-9	08	SS-10
09	EW-3		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bungarner

Order # 97-05-466
June 2, 1997 16:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: 808-PCB-S
Sample Description: SS-3
Test Description: PCB's (Soil)

Lab No: 01

Collected: 05/29/97 1500
Category: Soil
Method: 8081\3550

Analyst: ECL
Instrument: HP1

Extracted: 05/30/97
Injected: 05/31/97

File: 014F0101
Factor: 33

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	21
11104-28-2	Aroclor-1221	ND	21
11141-16-5	Aroclor-1232	ND	21
53469-21-9	Aroclor-1242	ND	21
12672-29-6	Aroclor-1248	47	21
11097-69-1	Aroclor-1254	ND	42
11096-82-5	Aroclor-1260	ND	42

SURROGATES:

Decachlorobiphenyl	<u>67.2</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>73.1</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-05-466
June 2, 1997 16:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: 808-PCB-S
Sample Description: SS-4
Test Description: PCB's (Soil)

Lab No: 02

Collected: 05/29/97 1500
Category: Soil
Method: 8081\3550

Analyst: ECL Extracted: 05/30/97 File: 017F0101
Instrument: HP1 Injected: 05/31/97 Factor: 165 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	100
11104-28-2	Aroclor-1221	ND	100
11141-16-5	Aroclor-1232	ND	100
53469-21-9	Aroclor-1242	ND	100
12672-29-6	Aroclor-1248	1400	100
11097-69-1	Aroclor-1254	ND	200
11096-82-5	Aroclor-1260	ND	200

SURROGATES:

Decachlorobiphenyl	65.9 % Recovery	(30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	88.2 % Recovery	(29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-05-466
June 3, 1997 10:29

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 8

Test Code: 808-PCB-S
Sample Description: SS-7
Test Description: PCB's (Soil)

Lab No: 05

Collected: 05/29/97 1630
Category: Soil
Method: 8081\3550

Analyst: ECL Extracted: 05/30/97 File: 020F0101
Instrument: HP1 Injected: 06/01/97 Factor: 660 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	520
11104-28-2	Aroclor-1221	ND	520
11141-16-5	Aroclor-1232	ND	520
53469-21-9	Aroclor-1242	ND	520
12672-29-6	Aroclor-1248	7700	520
11097 69 1	Aroclor 1254	ND	1000
11096-82-5	Aroclor-1260	ND	1000

SURROGATES:

Decachlorobiphenyl	90.7 % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	90 % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-05-466
Junc 2, 1997 16:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 12

Test Code: 808-PCB-W
Sample Description: EW-3
Test Description: PCB's (Water)

Lab No: 09

Collected: 05/29/97 1530
Category: Water
Method: 8081\3510

Analyst: ECL
Instrument: HP1

Extracted: 05/30/97
Injected: 06/01/97

File: 028F0101
Factor: 1

Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	0.5
11104-28-2	Aroclor-1221	ND	0.5
11141-16-5	Aroclor-1232	ND	0.5
53469-21-9	Aroclor-1242	ND	0.5
12672-29-6	Aroclor-1248	0.6	0.5
11097-69-1	Aroclor-1254	ND	1
11096-82-5	Aroclor-1260	ND	1

SURROGATES:

Decachlorobiphenyl	59 % Recovery (25% - 140%)
2,4,5,6-Tetrachloro-m-xylene	71.2 % Recovery (13% - 154%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-3 Collected: 05/29/97 1500 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	78	1	% wt.	05/30/97 DIH	D2216-90

SAMPLE ID: 02 SS-4 Collected: 05/29/97 1500 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	05/30/97 DIH	D2216-90

SAMPLE ID: 03 SS-5 Collected: 05/29/97 1600 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	71	1	% wt.	05/30/97 DIH	D2216-90

SAMPLE ID: 04 SS-6 Collected: 05/29/97 1600 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	70	1	% wt.	05/30/97 DIH	D2216-90

SAMPLE ID: 05 SS-7 Collected: 05/29/97 1630 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	64	1	% wt.	05/30/97 DIH	D2216-90

SAMPLE ID: 06 SS-8 Collected: 05/29/97 1630 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	59	1	% wt.	05/30/97 DIH	D2216-90

SAMPLE ID: 07 SS-9 Collected: 05/29/97 1645 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	63	1	% wt.	05/30/97 DIH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-05-466
June 2, 1997 16:27

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

Page 3

SAMPLE ID: 08 SS-10 Collected: 05/29/97 1645 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	59	1	% wt.	05/30/97	DIH D2216-90

NOTES AND DEFINITIONS:

44 Linn Street, Suite 501

Cincinnati, Ohio 45203

(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

ANALYTICAL
PARAMETERS
PCB METHOD 8080

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (614) 373-4071

Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attention: John Reggi


PO Number:
Account Number: ORMET-086

Login #: L9706002
Report Date: 06/03/97
Work ID: ORMET REMEDIATION
Date Received: 05/31/97

SAMPLE IDENTIFICATION

<u>Sample Number</u>	<u>Sample Description</u>	<u>Sample Number</u>	<u>Sample Description</u>
L9706002-01	SS-11	L9706002-02	SS-13
L9706002-03	EW-4		

All results on solids/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. The report shall not be reproduced, except in full, without the written approval of KEMRON.


Certified By
David L. Bumgarner

L3706002
1997 04:21 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Sample ID: L9706002-01
Sample ID: SS-11
Site/Work ID: ORMET REMEDIATION
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 05/30/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 89

Extract Date: N/A
Extract Date: 06/01/97
Analysis Date: 06/03/97

Instrument: HP1
Analyst: ECL
Lab File ID: 053R0101

Method: 8081\3550
Run ID: R25641

#	Compound	Units	Result	Qualifiers	RDL	Dilution
11-2	Aroclor-1016.....	ug/kg		ND	370	660
23-2	Aroclor-1221.....	ug/kg		ND	370	660
15-5	Aroclor-1232.....	ug/kg		ND	370	660
21-9	Aroclor-1242.....	ug/kg	3400		370	660
29-6	Aroclor-1248.....	ug/kg		ND	370	660
69-1	Aroclor-1254.....	ug/kg		ND	740	660
82-5	Aroclor-1260.....	ug/kg		ND	740	660
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	117	(30 - 173%)			
	1,4,5,6-Tetrachloro-m-xylene.....	137	(29 - 133%)			

L9706002
1997 04:21 pm

KEMRON ENVIRONMENTAL SERVICES

Sample ID: L9706002-01
Sample ID: SS-11
e/Work ID: CRMET REMEDIATION

Matrix: Soil
Collected: 05/30/97 1830

% Solid: 89
COC Info: N/A

	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Solids.....	% wt.	89		1.0	ENH	06/02/97	D2216-90	N/A

#L9706002
, 1997 04:21 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-W - PCB's (Water)

b Sample ID: L9706002-03
t Sample ID: EW-4
ite/Work ID: ORMET REMEDIATION
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 05/30/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: N/A

xtract Date: N/A
xtract Date: 06/01/97
alysis Date: 06/02/97

Instrument: HP1
Analyst: ECL
Lab File ID: 055R0101

Method: 8081\3510
Run ID: R25640

#	Compound	Units	Result	Qualifiers	RDL	Dilution
-11-2	Aroclor-1016.....	ug/L		ND		0.50 1
-28-2	Aroclor-1221.....	ug/L		ND		0.50 1
-16-5	Aroclor-1232.....	ug/L		ND		0.50 1
-21-9	Aroclor-1242.....	ug/L	2.0			0.50 1
-29-6	Aroclor-1248.....	ug/L		ND		0.50 1
-69-1	Aroclor-1254.....	ug/L		ND		1.0 1
-82-5	Aroclor-1260.....	ug/L		ND		1.0 1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	67.4		(25 - 140%)		
	2,4,5,6-Tetrachloro-m-xylene.....	68.0		(13 - 154%)		

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Marietta, Ohio 45750

Phone: (614) 373-4071



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Attn: John Reggi

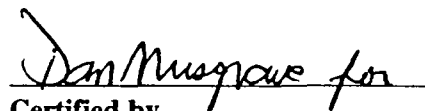
Login #: 97-06-154
Date Received: 06/05/97
Date Completed: 06/09/97
Date Reported: 06/09/97 16:03
Work ID: ORMET RENEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-5A/CRDA STAGE 1 RETEST	02	SS-6A/CRDA STAGE 1 RETEST

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

*This is to certify that the following samples were analyzed using good
laboratory practices to show the following results.*

SAMPLE ID: 01 SS-5A/CRDA STAGE 1 RETES Collected: 06/05/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	78	1	% wt.	06/06/97 ENH	D2216-90

SAMPLE ID: 02 SS-6A/CRDA STAGE 1 RETES Collected: 06/05/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	06/06/97 ENH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-06-154
June 9, 1997 16:03

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-5A/CRDA STAGE 1 RETEST
Test Description: PCB's (Soil)

Lab No: 01

Collected: 06/05/97
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/06/97 File: 014F0101
Instrument: HP7 Injected: 06/07/97 Factor: 660 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	420
11104-28-2	Aroclor-1221	ND	420
11141-16-5	Aroclor-1232	ND	420
53469-21-9	Aroclor-1242	ND	420
12672-29-6	Aroclor-1248	4700	420
11097-69-1	Aroclor-1254	ND	850
11096-82-5	Aroclor-1260	ND	850

SURROGATES:

Decachlorobiphenyl	78.7 % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	112 % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-154
June 9, 1997 16:03

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: 808-PCB-S Lab No: 02
Sample Description: SS-6A/CRDA STAGE 1 RETEST
Test Description: PCB's (Soil)

Collected: 06/05/97
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/06/97 File: 017F0101
Instrument: HP7 Injected: 06/08/97 Factor: 330 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	200
11104-28-2	Aroclor-1221	ND	200
11141-16-5	Aroclor-1232	ND	200
53469-21-9	Aroclor-1242	ND	200
12672-29-6	Aroclor-1248	1900	200
11097-69-1	Aroclor-1254	ND	410
11096-82-5	Aroclor-1260	ND	410

SURROGATES:

Decachlorobiphenyl	<u>65.3</u> % Recovery	(30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>84.7</u> % Recovery	(29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit



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CHAIN-OF-CUSTODY RECORD

[illegible]

forms/RECORD

Calculus 101: 0/8x stored in fact 16%; stored in mem 0/44.2

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109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071

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PO Box 176
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Attn: John Reggi

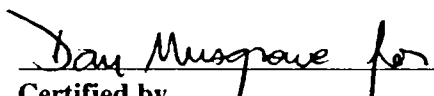
Login #: 97-06-272
Date Received: 06/12/97
Date Completed: 06/17/97
Date Reported: 06/17/97 13:17
Work ID: ORMET REMEDIATION/HANNIBAL, O

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-8A	02	SS-9A
03	SS-10A	04	SS-16
05	EW-5		

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David L. Bumgarner

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RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-8A Collected: **06/11/97 1330** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	79	1	% wt.	06/16/97 DLP	D2216-90

SAMPLE ID: 02 SS-9A Collected: **06/11/97 1430** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	83	1	% wt.	06/16/97 DLP	D2216-90

SAMPLE ID: 03 SS-10A Collected: **06/11/97 1345** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	84	1	% wt.	06/16/97 DLP	D2216-90

SAMPLE ID: 04 SS-16 Collected: **06/11/97 1430** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	83	1	% wt.	06/16/97 DLP	D2216-90

NOTES AND DEFINITIONS:

Order # 97-06-272
June 17, 1997 13:18

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-8A
Test Description: PCB's (Soil)

Lab No: 01

Collected: 06/11/97 1330
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/13/97 File: 011F0101
Instrument: HP7 Injected: 06/16/97 Factor: 3300 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	2100
11104-28-2	Aroclor-1221	ND	2100
11141-16-5	Aroclor-1232	ND	2100
53469-21-9	Aroclor-1242	5200	2100
12672-29-6	Aroclor-1248	ND	2100
11097-69-1	Aroclor-1254	ND	4200
11096-82-5	Aroclor-1260	ND	4200

SURROGATES:

Decachlorobiphenyl	<u>DL</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>DL</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit
DL = Surrogate or spike compound was diluted out

Order # 97-06-272
June 17, 1997 13:18

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: **808-PCB-S**
Sample Description: **SS-9A**
Test Description: **PCB's (Soil)**

Lab No: **02**

Collected: **06/11/97 1430**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **06/13/97** File: **008F0101**
Instrument: **HP7** Injected: **06/16/97** Factor: **3300** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	2000
11104-28-2	Aroclor-1221	ND	2000
11141-16-5	Aroclor-1232	ND	2000
53469-21-9	Aroclor-1242	5400	2000
12672-29-6	Aroclor-1248	ND	2000
11097-69-1	Aroclor-1254	ND	4000
11096-82-5	Aroclor-1260	ND	4000

SURROGATES:

Decachlorobiphenyl	<u>DL</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>DL</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit
DL = Surrogate or spike compound was diluted out

Order # 97-06-272
June 17, 1997 13:18

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: **808-PCB-S**
Sample Description: **SS-10A**
Test Description: **PCB's (Soil)**

Lab No: **03**

Collected: **06/11/97 1345**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **06/13/97** File: **009F0101**
Instrument: **HP7** Injected: **06/16/97** Factor: **3300** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	2000
11104-28-2	Aroclor-1221	ND	2000
11141-16-5	Aroclor-1232	ND	2000
53469-21-9	Aroclor-1242	13000	2000
12672-29-6	Aroclor-1248	ND	2000
11097-69-1	Aroclor-1254	ND	3900
11096-82-5	Aroclor-1260	ND	3900

SURROGATES:

Decachlorobiphenyl	<u>DL</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>DL</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit
DL = Surrogate or spike compound was diluted out

Order # 97-06-272
June 17, 1997 13:18

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 7

Test Code: 808-PCB-W
Sample Description: EW-5
Test Description: PCB's (Water)

Lab No: 05

Collected: 06/11/97 1445
Category: Water
Method: 8081\3510

Analyst: MLS Extracted: 06/12/97 File: 033F0101
Instrument: HP7 Injected: 06/14/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	0.5
11104-28-2	Aroclor-1221	ND	0.5
11141-16-5	Aroclor-1232	ND	0.5
53469-21-9	Aroclor-1242	ND	0.5
12672-29-6	Aroclor-1248	ND	0.5
11097-69-1	Aroclor-1254	ND	1
11096-82-5	Aroclor-1260	ND	1

SURROGATES:

Decachlorobiphenyl	<u>45.8</u> % Recovery (25% - 140%)
2,4,5,6-Tetrachloro-m-xylene	<u>63.4</u> % Recovery (13% - 154%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit



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CHAIN-OF-CUSTODY RECORD

forms/RECORD

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Phone: (614) 373-4071



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Attn: John Reggi

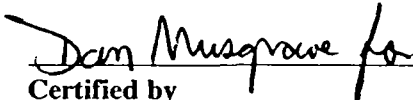
Login #: 97-06-304
Date Received: 06/13/97
Date Completed: 06/17/97
Date Reported: 06/17/97 09:58
Work ID: ORMET REMEDIATION/HANNIBAL, O

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-14	02	SS-15
03	SS-17		

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KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-14 Collected: 06/12/97 1615 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	74	1	% wt.	06/13/97 ENH	D2216-90

SAMPLE ID: 02 SS-15 Collected: 06/12/97 1630 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	06/13/97 ENH	D2216-90

SAMPLE ID: 03 SS-17 Collected: 06/12/97 1700 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	82	1	% wt.	06/13/97 ENH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-06-304
June 17, 1997 11:30

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-14
Test Description: PCB's (Soil)

Lab No: 01

Collected: 06/12/97 1615
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/13/97 File: 007F0101
Instrument: HP7 Injected: 06/15/97 Factor: 1650 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	1100
11104-28-2	Aroclor-1221	ND	1100
11141-16-5	Aroclor-1232	ND	1100
53469-21-9	Aroclor-1242	6500	1100
12672-29-6	Aroclor-1248	ND	1100
11097-69-1	Aroclor-1254	ND	2200
11096-82-5	Aroclor-1260	ND	2200

SURROGATES:

Decachlorobiphenyl	<u>DL</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>DL</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit
DL = Surrogate or spike compound was diluted out

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Cincinnati, Ohio 45203

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CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO.		LOCATION		NO. OF CONTAINERS		ANALYTICAL PARAMETERS		FORWARD RESULTS TO:	
SAMPLERS:		LABORATORY:		ADDRESS:		NO. OF CONTAINERS		ANALYTICAL PARAMETERS		FORWARD RESULTS TO:	
SAMPLE IDENTIFICATION		DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION		REMARKS:	
SS-14		6/12	4:15P	X		X		CRDA STAGE I			
SS-15		6/12	4:30P	X		X		" "			
SS-17		6/12	5:00P	X		X		" "			
RELINQUISHED BY:		DATE:		COMPANY:		RECEIVED BY:		DATE:		COMPANY:	
DR. SHATTUCK		6/13/97		DAMES & MOORE		LEWIS AYERS		6/13/97		KEMRON	
(NAME)		TIME:				(NAME)		TIME:			
(SIGNATURE)		10:47M				(SIGNATURE)		1047			
RELINQUISHED BY:		DATE:		COMPANY:		RECEIVED BY:		DATE:		COMPANY:	
LEWIS AYERS		6/13/97		KEMRON		DORIS GREGORY		6/13/97		KEMRON	
(NAME)		TIME:				(NAME)		TIME:			
(SIGNATURE)		12:10 PM				(SIGNATURE)		1210			



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109 Starlite Park
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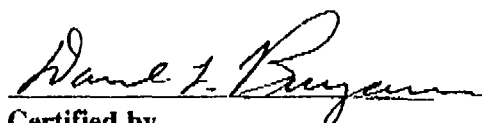
Login #: 97-06-387
Date Received: 06/18/97
Date Completed: 06/23/97
Date Reported: 06/23/97 09:08
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-15A		

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Order # 97-06-387
June 23, 1997 09:08

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-15A
Test Description: PCB's (Soil)

Lab No: 01

Collected: 06/17/97 1645
Category: Soil
Method: 8081\3550

Analyst: RDC
Instrument: HP10

Extracted: 06/19/97
Injected: 06/20/97

File: 023R0101
Factor: 3300

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	2000
11104-28-2	Aroclor-1221	ND	2000
11141-16-5	Aroclor-1232	ND	2000
53469-21-9	Aroclor-1242	ND	2000
12672-29-6	Aroclor-1248	20000	2000
11097-69-1	Aroclor-1254	ND	4100
11096-82-5	Aroclor-1260	ND	4100

SURROGATES:

Decachlorobiphenyl	102 % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	71.1 % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-387
June 23, 1997 09:08

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

Page 2

*This is to certify that the following samples were analyzed using good
laboratory practices to show the following results.*

SAMPLE ID: 01 SS-15A Collected: 06/17/97 1645 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	06/18/97 JWR	D2216-90

NOTES AND DEFINITIONS:

[illegible]

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Marietta, Ohio 45750

Phone: (614) 373-4071



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Attn: John Reggi

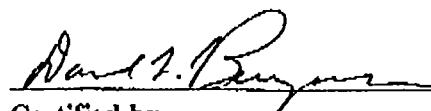
Login #: 97-06-410
Date Received: 06/18/97
Date Completed: 06/23/97
Date Reported: 06/23/97 11:41
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-13A	02	SS-16A

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Order # 97-06-410
June 23, 1997 11:42KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-13A
Test Description: PCB's (Soil)

Lab No: 01

Collected: 06/18/97 1440
Category: Soil
Method: 8081\3550Analyst: RDC
Instrument: HP10Extracted: 06/19/97
Injected: 06/20/97File: 021R0101
Factor: 33

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	19
11104-28-2	Aroclor-1221	ND	19
11141-16-5	Aroclor-1232	ND	19
53469-21-9	Aroclor-1242	ND	19
12672-29-6	Aroclor-1248	ND	19
11097-69-1	Aroclor 1254	140	38
11096-82-5	Aroclor-1260	ND	38

SURROGATES:

Decachlorobiphenyl	87.7 % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	64 % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit.

Order # 97-06-410
June 23, 1997 11:42

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

Page 2

*This is to certify that the following samples were analyzed using good
laboratory practices to show the following results.*

SAMPLE ID: 01 SS-13A Collected: 06/18/97 1440 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	06/19/97 JWR	D2216-90

SAMPLE ID: 02 SS-16A Collected: 06/18/97 1445 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	84	1	% wt.	06/19/97 JWR	D2216-90

NOTES AND DEFINITIONS:

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. <u>ORMET REMEDIATION</u>						NO. OF CONTAINERS	ANALYTICAL PARAMETERS							FORWARD RESULTS TO:		
		LOCATION <u>HANNIBAL OHIO</u>																
SAMPLERS: <u>D.R. SHATTUCK</u> (NAME) <u>[Signature]</u> (SIGNATURE)		LABORATORY: <u>KEMRON</u> ADDRESS: <u>MARIETTA OHIO</u>																
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION										REMARKS	
SS-13A	6/18	2:40	X		X		CRDA IN CMSD	1	X									
SS-16A	6/18	2:45	X		X			1	X									
RELINQUISHED BY: <u>D.R. SHATTUCK</u> (NAME) <u>[Signature]</u> (SIGNATURE)	COMPANY: <u>D & M</u>			DATE: <u>6/18</u> TIME: <u>3:18 PM</u>		RECEIVED BY: <u>Michael Wetz</u> (NAME) <u>[Signature]</u> (SIGNATURE)		COMPANY: <u>Kemron</u>			DATE: <u>6-18-07</u> TIME: <u>3:00 PM</u>							
RELINQUISHED BY: _____ (NAME) _____ (SIGNATURE)	COMPANY: _____			DATE: _____ TIME: _____		RECEIVED BY: _____ (NAME) _____ (SIGNATURE)		COMPANY: _____			DATE: _____ TIME: _____							

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

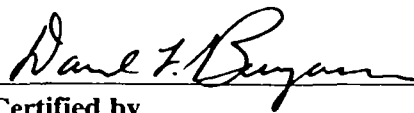
Login #: 97-06-610
Date Received: 06/27/97
Date Completed: 06/30/97
Date Reported: 06/30/97 15:51
Work ID: ORMET REMEDITATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-17B		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

Order # 97-06-610
June 30, 1997 15:51

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

Page 2

*This is to certify that the following samples were analyzed using good
laboratory practices to show the following results.*

SAMPLE ID: 01 SS-17B Collected: 06/27/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	71	1	% wt.	06/27/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-06-610
June 30, 1997 15:51

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-17B
Test Description: PCB's (Soil)

Lab No: 01

Collected: 06/27/97
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/27/97 File: 023F0101
Instrument: HP7 Injected: 06/28/97 Factor: 660 Units: ug/kg

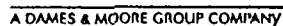
CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	460
11104-28-2	Aroclor-1221	ND	460
11141-16-5	Aroclor-1232	ND	460
53469-21-9	Aroclor-1242	ND	460
12672-29-6	Aroclor-1248	5200	460
11097-69-1	Aroclor-1254	ND	930
11096-82-5	Aroclor-1260	ND	930

SURROGATES:

Decachlorobiphenyl	<u>61.1</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>54.4</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit



(513) 651-3440 Fax (513) 651-3452

PURCHASE ORDER NO.		PROJECT NAME/ NO. ORMET REMEDIATION						NO. OF CONTAINERS	ANALYTICAL PARAMETERS										FORWARD RESULTS TO:	
		LOCATION HANNIBAL, OHIO							PCB METALS & SOIL PAH											
SAMPLERS: DR. SHUTTICK (NAME) <i>Dr. Shuttick</i> (SIGNATURE)		LABORATORY: KEMRON ADDRESS: MARIETTA OHIO																		
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION											REMARKS:		
SS-17B	6/27	9:45	X		X		CRDA STAGE I	1	X									RUSH		
SS-41		10:30	X		X		CRDA STAGE II	1	X	X										
SS-42		11:45	X		X		" "	1	X	X										
SS-43		11:50	X		X		" "	1	X	X										
SS-44		12:00	X		X		CRDA STAGE II	1	X	X										
EW-8				X		X		1		X										
TRIP BLANK #1	6/27		X	X	X			1	X	X										
TRIP BLANK #2	6/27		X		X			1	X	X										
RELINQUISHED BY: DR. SHUTTICK (NAME) <i>Dr. Shuttick</i> (SIGNATURE)		COMPANY: D & M				DATE: 6/27/97 TIME: 1:55		RECEIVED BY: _____ (NAME) _____ (SIGNATURE)				COMPANY: _____				DATE: _____ TIME: _____				
RELINQUISHED BY: _____ (NAME) _____ (SIGNATURE)		COMPANY: _____				DATE: _____ TIME: _____		RECEIVED BY: _____ (NAME) <i>Angela P. Scott</i> (SIGNATURE)				COMPANY: _____ <i>Kernell</i>				DATE: 6/27/97 TIME: 1:55				

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071

Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

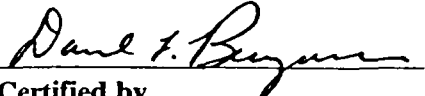
Login #: 97-07-056
Date Received: 07/02/97
Date Completed: 07/07/97
Date Reported: 07/07/97 13:28
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-12	02	SS-16B
03	TRIP BLANK #3		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


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David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-12 Collected: **06/30/97 1645** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	86	1	% wt.	07/02/97 CLH	D2216-90

SAMPLE ID: 02 SS-16B Collected: **06/30/97 1700** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	07/02/97 CLH	D2216-90

SAMPLE ID: 03 TRIP BLANK #3 Collected: **06/30/97** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/02/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-07-056
July 7, 1997 13:28

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-12
Test Description: PCB's (Soil)

Lab No: 01

Collected: 06/30/97 1645
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 07/02/97 File: 014F0101
Instrument: HP10 Injected: 07/02/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	19
11104-28-2	Aroclor-1221	ND	19
11141-16-5	Aroclor-1232	ND	19
53469-21-9	Aroclor-1242	ND	19
12672-29-6	Aroclor-1248	260	19
11097-69-1	Aroclor-1254	ND	38
11096-82-5	Aroclor-1260	ND	38

SURROGATES:

Decachlorobiphenyl	<u>81</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>82</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-056
July 7, 1997 13:28

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: **808-PCB-S**
Sample Description: **SS-16B**
Test Description: **PCB's (Soil)**

Lab No: **02**

Collected: **06/30/97 1700**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **07/02/97** File: **003F0101**
Instrument: **HP10** Injected: **07/02/97** Factor: **330** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	200
11104-28-2	Aroclor-1221	ND	200
11141-16-5	Aroclor-1232	ND	200
53469-21-9	Aroclor-1242	ND	200
12672-29-6	Aroclor-1248	2500	200
11097-69-1	Aroclor-1254	ND	410
11096-82-5	Aroclor-1260	ND	410

SURROGATES:

Decachlorobiphenyl	<u>99.4</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>89.8</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-056
July 7, 1997 13:28

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: **808-PCB-S**
Sample Description: **TRIP BLANK #3**
Test Description: **PCB's (Soil)**

Lab No: **03**

Collected: **06/30/97**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS**
Instrument: **HP10**

Extracted: **07/02/97**
Injected: **07/02/97**

File: **016F0101**
Factor: **33**

Units: **ug/kg**

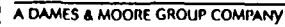
CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	19
11104-28-2	Aroclor-1221	ND	19
11141-16-5	Aroclor-1232	ND	19
53469-21-9	Aroclor-1242	ND	19
12672-29-6	Aroclor-1248	250	19
11097-69-1	Aroclor-1254	ND	38
11096-82-5	Aroclor-1260	ND	38

SURROGATES:

Decachlorobiphenyl	<u>78</u> % Recovery	(30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>76.6</u> % Recovery	(29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit



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forms/RECORD

CRDA STAGE II
VERIFICATION SAMPLE ANALYTICAL DATA SUMMARY REPORTS

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

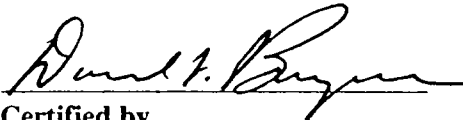
Login #: 97-06-447
Date Received: 06/20/97
Date Completed: 06/23/97
Date Reported: 06/23/97 16:52
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-18	02	SS-19
03	SS-20	04	SS-22
05	SS-23	06	SS-24

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Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-18 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	64	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 02 SS-19 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	71	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 03 SS-20 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	65	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 04 SS-22 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	68	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 05 SS-23 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	60	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 06 SS-24 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	67	1	% wt.	06/20/97 DIH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-06-447
June 23, 1997 16:52

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: **808-PCB-S**
Sample Description: **SS-18**
Test Description: **PCB's (Soil)**

Lab No: **01**

Collected: **06/19/97**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **06/20/97** File: **007F0101**
Instrument: **HP7** Injected: **06/22/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	26
11104-28-2	Aroclor-1221	ND	26
11141-16-5	Aroclor-1232	ND	26
53469-21-9	Aroclor-1242	ND	26
12672-29-6	Aroclor-1248	200	26
11097-69-1	Aroclor-1254	ND	52
11096-82-5	Aroclor-1260	ND	52

SURROGATES:

Decachlorobiphenyl	<u>74.9</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>76.8</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-447
June 23, 1997 16:52

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: 808-PCB-S
Sample Description: SS-19
Test Description: PCB's (Soil)

Lab No: 02

Collected: 06/19/97
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/20/97 File: 008F0101
Instrument: HP7 Injected: 06/22/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	23
11104-28-2	Aroclor-1221	ND	23
11141-16-5	Aroclor-1232	ND	23
53469-21-9	Aroclor-1242	ND	23
12672-29-6	Aroclor-1248	180	23
11097-69-1	Aroclor-1254	ND	46
11096-82-5	Aroclor-1260	ND	46

SURROGATES:

Decachlorobiphenyl	70.1 % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	65.2 % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-447
June 23, 1997 16:52

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: **808-PCB-S**
Sample Description: **SS-20**
Test Description: **PCB's (Soil)**

Lab No: **03**

Collected: **06/19/97**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **06/20/97** File: **009F0101**
Instrument: **HP7** Injected: **06/22/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	25
11104-28-2	Aroclor-1221	ND	25
11141-16-5	Aroclor-1232	ND	25
53469-21-9	Aroclor-1242	ND	25
12672-29-6	Aroclor-1248	200	25
11097-69-1	Aroclor-1254	ND	51
11096-82-5	Aroclor-1260	ND	51

SURROGATES:

Decachlorobiphenyl	<u>60</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>59.3</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-447
June 23, 1997 16:52

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 8

Test Code: 808-PCB-S
Sample Description: SS-24
Test Description: PCB's (Soil)

Lab No: 06

Collected: 06/19/97
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/20/97 File: 012F0101
Instrument: HP7 Injected: 06/22/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	25
11104-28-2	Aroclor-1221	ND	25
11141-16-5	Aroclor-1232	ND	25
53469-21-9	Aroclor-1242	ND	25
12672-29-6	Aroclor-1248	130	25
11097-69-1	Aroclor-1254	ND	49
11096-82-5	Aroclor-1260	ND	49

SURROGATES:

Decachlorobiphenyl	<u>62.3</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>62.3</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi


Login #: 97-06-448
Date Received: 06/20/97
Date Completed: 06/25/97
Date Reported: 06/25/97 15:59
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-18	02	SS-19
03	SS-20	04	SS-22
05	SS-23	06	SS-24
07	EW-6		

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Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-18 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	64	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 02 SS-19 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	71	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 03 SS-20 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	65	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 04 SS-22 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	68	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 05 SS-23 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	60	1	% wt.	06/20/97 DIH	D2216-90

SAMPLE ID: 06 SS-24 Collected: 06/19/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	67	1	% wt.	06/20/97 DIH	D2216-90

NOTES AND DEFINITIONS:

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **827-PAH**
Sample Description: **SS-18**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **01**

Collected: **06/19/97**
Category: **Soil**
Method: **8270B\3550**

Analyst: **MDC** Extracted: **06/23/97** File: **OR3362**
Instrument: **HPMS5** Injected: **06/24/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
91-20-3	Naphthalene	ND	260
208-96-8	Acenaphthylene	ND	260
83-32-9	Acenaphthene	280	260
86-73-7	Fluorene	ND	260
85-01-8	Phenanthrene	2300	260
120-12-7	Anthracene	610	260
206-44-0	Fluoranthene	5000	260
129-00-0	Pyrene	4500	260
56-55-3	Benzo(a)anthracene	3900	260
218-01-9	Chrysene	4500	260
205-99-2	Benzo(b)fluoranthene	5000	260
207-08-9	Benzo(k)fluoranthene	3900	260
50-32-8	Benzo(a)pyrene	5800	260
193-39-5	Indeno(1,2,3-cd)pyrene	3100	260
53-70-3	Dibenzo(a,h)anthracene	1200	260
191-24-2	Benzo(g,h,i)perylene	3100	260

SURROGATES:

Nitrobenzene-d5	<u>43.4</u>	% Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>56.2</u>	% Recovery	(30% - 115%)
p-Terphenyl-d14	<u>74.3</u>	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **827-PAH**
Sample Description: **SS-19**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **02**

Collected: **06/19/97**
Category: **Soil**
Method: **8270B\3550**

Analyst: **MDC** Extracted: **06/23/97** File: **OR3347**
Instrument: **HPMS5** Injected: **06/23/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
91-20-3	Naphthalene	ND	230
208-96-8	Acenaphthylene	ND	230
83-32-9	Acenaphthene	ND	230
86-73-7	Fluorene	ND	230
85-01-8	Phenanthrene	2400	230
120-12-7	Anthracene	ND	230
206-44-0	Fluoranthene	5600	230
129-00-0	Pyrene	5100	230
56-55-3	Benzo(a)anthracene	3800	230
218-01-9	Chrysene	4200	230
205-99-2	Benzo(b)fluoranthene	4600	230
207-08-9	Benzo(k)fluoranthene	3500	230
50-32-8	Benzo(a)pyrene	4600	230
193-39-5	Indeno(1,2,3-cd)pyrene	3200	230
53-70-3	Dibenzo(a,h)anthracene	ND	230
191-24-2	Benzo(g,h,i)perylene	3800	230

SURROGATES:

Nitrobenzene-d5	<u>35.6</u>	% Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>49.6</u>	% Recovery	(30% - 115%)
p-Terphenyl-d14	<u>61.4</u>	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **827-PAH**
Sample Description: **SS-24**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **06**

Collected: **06/19/97**
Category: **Soil**
Method: **8270B\3550**

Analyst: **MDC** Extracted: **06/23/97** File: **OR3351**
Instrument: **HPMS5** Injected: **06/23/97** Factor: **330** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
91-20-3	Naphthalene	ND	2500
208-96-8	Acenaphthylene	ND	2500
83-32-9	Acenaphthene	ND	2500
86-73-7	Fluorene	ND	2500
85-01-8	Phenanthrene	6300	2500
120-12-7	Anthracene	ND	2500
206-44-0	Fluoranthene	12000	2500
129-00-0	Pyrene	10000	2500
56-55-3	Benzo(a)anthracene	7300	2500
218-01-9	Chrysene	7800	2500
205-99-2	Benzo(b)fluoranthene	7900	2500
207-08-9	Benzo(k)fluoranthene	7200	2500
50-32-8	Benzo(a)pyrene	8500	2500
193-39-5	Indeno(1,2,3-cd)pyrene	5700	2500
53-70-3	Dibenzo(a,h)anthracene	ND	2500
191-24-2	Benzo(g,h,i)perylene	6300	2500

SURROGATES:

Nitrobenzene-d5	<u>51</u> % Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>61.6</u> % Recovery	(30% - 115%)
p-Terphenyl-d14	<u>72.2</u> % Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **827-PAH**
Sample Description: **EW-6**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **07**

Collected: **06/19/97**
Category: **Water**
Method: **8270B\3550**

Analyst: **MDC** Extracted: **06/23/97** File: **OR3367**
Instrument: **HPMS5** Injected: **06/24/97** Factor: **2** Units: **ug/L**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
91-20-3	Naphthalene	ND	10
208-96-8	Acenaphthylene	ND	10
83-32-9	Acenaphthene	ND	10
86-73-7	Fluorene	ND	10
85-01-8	Phenanthrene	ND	10
120-12-7	Anthracene	ND	10
206-44-0	Fluoranthene	ND	10
129-00-0	Pyrene	ND	10
56-55-3	Benzo(a)anthracene	ND	10
218-01-9	Chrysene	ND	10
205-99-2	Benzo(b)fluoranthene	ND	10
207-08-9	Benzo(k)fluoranthene	ND	10
50-32-8	Benzo(a)pyrene	ND	10
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10
53-70-3	Dibenzo(a,h)anthracene	ND	10
191-24-2	Benzo(g,h,i)perylene	ND	10

SURROGATES:

Nitrobenzene-d5	<u>64.2</u>	% Recovery	(35% - 114%)
2-Fluorobiphenyl	<u>71.7</u>	% Recovery	(43% - 116%)
p-Terphenyl-d14	<u>112</u>	% Recovery	(33% - 141%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit



644 Linn Street, Suite 501

Cincinnati, Ohio 45203

(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

forms/RECORD

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

Login #: 97-06-582
Date Received: 06/26/97
Date Completed: 06/30/97
Date Reported: 06/30/97 08:36
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-33	02	SS-36
03	SPS 1A	04	SPS 1B
05	SPS 1C		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.

A handwritten signature in black ink, appearing to read "David L. Bumgarner", written over a horizontal line.

Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-33 Collected: 06/25/97 1620 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	78	1	% wt.	06/26/97 DIH	D2216-90

SAMPLE ID: 02 SS-36 Collected: 06/25/97 1700 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	94	1	% wt.	06/26/97 DIH	D2216-90

SAMPLE ID: 03 SPS-1A Collected: 06/25/97 1830 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	06/26/97 DIH	D2216-90

SAMPLE ID: 04 SPS-1B Collected: 06/25/97 1830 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	06/26/97 DIH	D2216-90

SAMPLE ID: 05 SPS-1C Collected: 06/25/97 1830 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	84	1	% wt.	06/26/97 DIH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-06-582
June 30, 1997 08:36

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-33
Test Description: PCB's (Soil)

Lab No: 01

Collected: 06/25/97 1620
Category: Soil
Method: 8081\3550

Analyst: MLS
Instrument: HP10

Extracted: 06/26/97
Injected: 06/27/97

File: 006F0101
Factor: 33

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	21
11104-28-2	Aroclor-1221	ND	21
11141-16-5	Aroclor-1232	ND	21
53469-21-9	Aroclor-1242	ND	21
12672-29-6	Aroclor-1248	81	21
11097-69-1	Aroclor-1254	ND	42
11096-82-5	Aroclor-1260	ND	42

SURROGATES:

Decachlorobiphenyl	<u>64.8</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>51.8</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

644 Linn Street, Suite 501
Cincinnati, Ohio 45203
(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. <u>ORMET REMEDIATION</u>						NO. OF CONTAINERS	ANALYTICAL PARAMETERS <u>PCB METALS 983</u> <u>PAH</u>								FORWARD RESULTS TO:	
		LOCATION <u>HANNIBAL OHIO</u>																
SAMPLERS: <u>D.R. SHATTUCK</u> (NAME) <u>D.R. Shattuck</u> (SIGNATURE)		LABORATORY: <u>KEMRON</u> ADDRESS: <u>MARIETTA OHIO</u>																
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION									REMARKS:		
SS-25	6/25	11:30 ^A	X		X		CRDA STAGE II	1	X	X								
SS-26		11:45 ^A						1	X	X								
SS-27		11:50 ^A						1	X	X								
SS-28		12:00 ^P						1	X	X								
SS-29		12:05 ^P						1	X	X								
SS-30		3:45 ^P						1	X	X								
SS-31		3:50						1	X	X								
SS-32		3:55						1	X	X								
X SS-33		4:20						1	X	X								
SS-34		4:30						1	X	X								
SS-35		4:50						1	X	X								
X SS-36		5:00 ^P						1	X	X								
SS-37		5:15 ^P						1	X	X								
SS-38		5:30						1	X	X								
SS-39	6/25	5:45	X		X			1	X	X								
RELINQUISHED BY: <u>D.R. SHATTUCK</u> (NAME) <u>D.R. Shattuck</u> (SIGNATURE)		COMPANY: <u>D & M</u>		DATE: <u>6/26/97</u> TIME: <u>12:41 PM</u>		RECEIVED BY: <u>Michael S. Wetz</u> (NAME) <u>Michael S. Wetz</u> (SIGNATURE)		COMPANY: <u>KEMRON</u>		DATE: <u>6/26/97</u> TIME: <u>12:41</u>								
RELINQUISHED BY: <u>Michael S. Wetz</u> (NAME) <u>Michael S. Wetz</u> (SIGNATURE)		COMPANY: <u>Kemron</u>		DATE: <u>6/26/97</u> TIME: <u>1:35</u>		RECEIVED BY: <u>Theresa L. Rood</u> (NAME) <u>Theresa L. Rood</u> (SIGNATURE)		COMPANY: <u>Kemron</u>		DATE: <u>6/26/97</u> TIME: <u>1:35</u>								



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Cincinnati, Ohio 45203
(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

[illegible]

forms/RECORD

(SIGNATURE) 7/10/2006 155
 Author: Town of O/S need contact

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

Login #: 97-06-583
Date Received: 06/26/97
Date Completed: 07/01/97
Date Reported: 07/01/97 16:26
Work ID: ORMET REMEDITATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-25	02	SS-26
03	SS-27	04	SS-28
05	SS-29	06	SS-30
07	SS-31	08	SS-32
09	SS-34	10	SS-35
11	SS-37	12	SS-38
13	SS-39	14	SS-40
15	EW-7	16	EW-8
17	SS-33	18	SS-36
19	SPS-1A	20	SPS-1B
21	SPS-1C		

*All results for soils/sludges are reported on a dry weight basis, where applicable,
unless otherwise specified. This report shall not be reproduced, except in full,
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A handwritten signature in black ink, appearing to read "David L. Bumgarner".

Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 02 SS-26 Collected: 06/25/97 1145 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	77	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 03 SS-27 Collected: 06/25/97 1150 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	71	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 04 SS-28 Collected: 06/25/97 1200 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	79	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 05 SS-29 Collected: 06/25/97 1205 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	78	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 06 SS-30 Collected: 06/25/97 1545 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	82	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 07 SS-31 Collected: 06/25/97 1550 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	83	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 08 SS-32 Collected: 06/25/97 1555 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	06/30/97 CLH	D2216-90

NOTES AND DEFINITIONS:

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

SAMPLE ID: 08 SS-32 Collected: 06/25/97 1555 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 09 SS-34 Collected: 06/25/97 1630 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	78	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 10 SS-35 Collected: 06/25/97 1650 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	85	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 11 SS-37 Collected: 06/25/97 1715 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	95	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 12 SS-38 Collected: 06/25/97 1730 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	92	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 13 SS-39 Collected: 06/25/97 1745 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	06/30/97 CLH	D2216-90

SAMPLE ID: 14 SS-40 Collected: 06/25/97 1815 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	95	1	% wt.	06/30/97 CLH	D2216-90

NOTES AND DEFINITIONS:

QNS = Quantity not sufficient

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

SAMPLE ID: 17 SS-33 Collected: 06/25/97 1620 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	78	1	% wt.	06/26/97 DIH	D2216-90

SAMPLE ID: 18 SS-36 Collected: 06/25/97 1700 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	94	1	% wt.	06/26/97 DIH	D2216-90

SAMPLE ID: 19 SPS-1A Collected: 06/25/97 1830 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	06/26/97 DIH	D2216-90

SAMPLE ID: 20 SPS-1B Collected: 06/25/97 1830 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	06/26/97 DIH	D2216-90

SAMPLE ID: 21 SPS-1C Collected: 06/25/97 1830 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	84	1	% wt.	06/26/97 DIH	D2216-90

NOTES AND DEFINITIONS:

QNS = Quantity not sufficient

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 7

Test Code: **808-PCB-S**
Sample Description: **SS-26**
Test Description: **PCB's (Soil)**

Lab No: **02**

Collected: **06/25/97 1145**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **06/27/97** File: **006F0101**
Instrument: **HP10** Injected: **06/28/97** Factor: **660** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	430
11104-28-2	Aroclor-1221	ND	430
11141-16-5	Aroclor-1232	ND	430
53469-21-9	Aroclor-1242	ND	430
12672-29-6	Aroclor-1248	570	430
11097-69-1	Aroclor-1254	ND	860
11096-82-5	Aroclor-1260	ND	860

SURROGATES:

Decachlorobiphenyl	<u>48</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>45.8</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 9

Test Code: 808-PCB-S
Sample Description: SS-27
Test Description: PCB's (Soil)

Lab No: 03

Collected: 06/25/97 1150
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/27/97 File: 009F0101
Instrument: HP10 Injected: 06/28/97 Factor: 660 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	460
11104-28-2	Aroclor-1221	ND	460
11141-16-5	Aroclor-1232	ND	460
53469-21-9	Aroclor-1242	ND	460
12672-29-6	Aroclor-1248	700	460
11097-69-1	Aroclor-1254	ND	930
11096-82-5	Aroclor-1260	ND	930

SURROGATES:

Decachlorobiphenyl	<u>47.3</u> % Recovery	(30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>44.9</u> % Recovery	(29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 11

Test Code: 808-PCB-S
Sample Description: SS-28
Test Description: PCB's (Soil)

Lab No: 04

Collected: 06/25/97 1200
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/27/97 File: 010F0101
Instrument: HP10 Injected: 06/28/97 Factor: 660 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	420
11104-28-2	Aroclor-1221	ND	420
11141-16-5	Aroclor-1232	ND	420
53469-21-9	Aroclor-1242	ND	420
12672-29-6	Aroclor-1248	660	420
11097-69-1	Aroclor-1254	ND	840
11096-82-5	Aroclor-1260	ND	840

SURROGATES:

Decachlorobiphenyl	<u>63.4</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>56.7</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 13

Test Code: **808-PCB-S**
Sample Description: **SS-29**
Test Description: **PCB's (Soil)**

Lab No: **05**

Collected: **06/25/97 1205**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **06/27/97** File: **003F0101**
Instrument: **HP10** Injected: **06/29/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	21
11104-28-2	Aroclor-1221	ND	21
11141-16-5	Aroclor-1232	ND	21
53469-21-9	Aroclor-1242	ND	21
12672-29-6	Aroclor-1248	210	21
11097-69-1	Aroclor-1254	ND	42
11096-82-5	Aroclor-1260	ND	42

SURROGATES:

Decachlorobiphenyl	<u>69.2</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>64.9</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 15

Test Code: **808-PCB-S**
Sample Description: **SS-30**
Test Description: **PCB's (Soil)**

Lab No: **06**

Collected: **06/25/97 1545**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS**
Instrument: **HP10**

Extracted: **06/27/97**
Injected: **06/29/97**

File: **004F0101**
Factor: **33**

Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	20
11104-28-2	Aroclor-1221	ND	20
11141-16-5	Aroclor-1232	ND	20
53469-21-9	Aroclor-1242	ND	20
12672-29-6	Aroclor-1248	170	20
11097-69-1	Aroclor-1254	ND	40
11096-82-5	Aroclor-1260	ND	40

SURROGATES:

Decachlorobiphenyl	<u>68.1</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>63.7</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 17

Test Code: 808-PCB-S
Sample Description: SS-31
Test Description: PCB's (Soil)

Lab No: 07

Collected: 06/25/97 1550
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/27/97 File: 015F0101
Instrument: HP10 Injected: 06/28/97 Factor: 660 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	400
11104-28-2	Aroclor-1221	ND	400
11141-16-5	Aroclor-1232	ND	400
53469-21-9	Aroclor-1242	ND	400
12672-29-6	Aroclor-1248	710	400
11097-69-1	Aroclor-1254	ND	800
11096-82-5	Aroclor-1260	ND	800

SURROGATES:

Decachlorobiphenyl	<u>70.5</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>61.1</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 19

Test Code: 808-PCB-S
Sample Description: SS-32
Test Description: PCB's (Soil)

Lab No: 08

Collected: 06/25/97 1555
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 06/27/97 File: 005F0101
Instrument: HP10 Injected: 06/29/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	20
11104-28-2	Aroclor-1221	ND	20
11141-16-5	Aroclor-1232	ND	20
53469-21-9	Aroclor-1242	ND	20
12672-29-6	Aroclor-1248	260	20
11097-69-1	Aroclor-1254	ND	41
11096-82-5	Aroclor-1260	ND	41

SURROGATES:

Decachlorobiphenyl	<u>64.6</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>65</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 21

Test Code: 808-PCB-S
Sample Description: SS-34
Test Description: PCB's (Soil)

Lab No: 09

Collected: 06/25/97 1630
Category: Soil
Method: 8081\3550

Analyst: MLS
Instrument: HP10

Extracted: 06/27/97
Injected: 06/29/97

File: 006F0101
Factor: 33

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	21
11104-28-2	Aroclor-1221	ND	21
11141-16-5	Aroclor-1232	ND	21
53469-21-9	Aroclor-1242	ND	21
12672-29-6	Aroclor-1248	96	21
11097-69-1	Aroclor-1254	ND	42
11096-82-5	Aroclor-1260	ND	42

SURROGATES:

Decachlorobiphenyl	<u>56.3</u> % Recovery	(30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>60.4</u> % Recovery	(29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: 827-PAH-ORMET
Sample Description: SS-37
Test Description: Polyaromatic Hydrocarbons

Lab No: 11

Collected: 06/25/97 1715
Category: Soil
Method: 8270\3550

Analyst: JLI Extracted: 06/26/97 File: OR593
Instrument: HPMS7 Injected: 06/28/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo(a)anthracene	5700D	5900
205-99-2	Benzo(b)fluoranthene	6400D	5900
207-08-9	Benzo(k)fluoranthene	5100D	5900
191-24-2	Benzo(g,h,i)perylene	2000	5900
50-32-8	Benzo(a)pyrene	6300D	5900
218-01-9	Chrysene	6400D	5900
53-70-3	Dibenzo(a,h)anthracene	240	5900
193-39-5	Indeno(1,2,3-cd)pyrene	2200	5900

SURROGATES:

Nitrobenzene-d5	67.2	% Recovery	(23% - 120%)
2-Fluorobiphenyl	81.1	% Recovery	(30% - 115%)
p-Terphenyl-d14	93.4	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: **808-PCB-S**
Sample Description: **SS-39**
Test Description: **PCB's (Soil)**

Lab No: **13**

Collected: **06/25/97 1745**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **06/27/97** File: **007F0101**
Instrument: **HP10** Injected: **06/29/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	20
11104-28-2	Aroclor-1221	ND	20
11141-16-5	Aroclor-1232	ND	20
53469-21-9	Aroclor-1242	ND	20
12672-29-6	Aroclor-1248	310	20
11097-69-1	Aroclor-1254	ND	41
11096-82-5	Aroclor-1260	ND	41

SURROGATES:

Decachlorobiphenyl	<u>77.1</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>68.7</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: 808-PCB-S
Sample Description: SS-40
Test Description: PCB's (Soil)

Lab No: 14

Collected: 06/25/97 1815
Category: Soil
Method: 8081\3550

Analyst: MLS
Instrument: HP10

Extracted: 06/27/97
Injected: 06/29/97

File: 008F0101
Factor: 33

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	17
11104-28-2	Aroclor-1221	ND	17
11141-16-5	Aroclor-1232	ND	17
53469-21-9	Aroclor-1242	ND	17
12672-29-6	Aroclor-1248	310	17
11097-69-1	Aroclor-1254	ND	35
11096-82-5	Aroclor-1260	ND	35

SURROGATES:

Decachlorobiphenyl	<u>82.3</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>75.7</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 33

Test Code: **827-PAH-ORMET**
Sample Description: **EW-7**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **15**

Collected: **06/25/97 1530**
Category: **Water**
Method: **8270\3550**

Analyst: **MDC** Extracted: **06/27/97** File: **OR10703**
Instrument: **HPMS3** Injected: **06/28/97** Factor: **2** Units: **ug/L**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo(a)anthracene	ND	10
205-99-2	Benzo(b)fluoranthene	ND	10
207-08-9	Benzo(k)fluoranthene	ND	10
191-24-2	Benzo(g,h,i)perylene	ND	10
50-32-8	Benzo(a)pyrene	ND	10
218-01-9	Chrysene	ND	10
53-70-3	Dibenzo(a,h)anthracene	ND	10
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10

SURROGATES:

Nitrobenzene-d5	<u>70.4</u> % Recovery	(35% - 114%)
2-Fluorobiphenyl	<u>75.9</u> % Recovery	(43% - 116%)
p-Terphenyl-d14	<u>105</u> % Recovery	(33% - 141%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: 827-PAH-ORMET
Sample Description: EW-8
Test Description: Polyaromatic Hydrocarbons

Lab No: 16

Collected: 06/25/97 1650

Category: Water

Method: 8270\3550

Analyst: MDC
Instrument: HPMS3

Extracted: 06/27/97
Injected: 06/28/97

File: OR10704
Factor: 2

Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo(a)anthracene	ND	10
205-99-2	Benzo(b)fluoranthene	ND	10
207-08-9	Benzo(k)fluoranthene	ND	10
191-24-2	Benzo(g,h,i)perylene	ND	10
50-32-8	Benzo(a)pyrene	ND	10
218-01-9	Chrysene	ND	10
53-70-3	Dibenzo(a,h)anthracene	ND	10
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10

SURROGATES:

Nitrobenzene-d5	56.4	% Recovery	(35% - 114%)
2-Fluorobiphenyl	58.7	% Recovery	(43% - 116%)
p-Terphenyl-d14	104	% Recovery	(33% - 141%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-06-583
July 1, 1997 16:26

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: 827-PAH-ORMET
Sample Description: SS-36
Test Description: Polyaromatic Hydrocarbons

Lab No: 18

Collected: 06/25/97 1700
Category: Soil
Method: 8270\3550

Analyst: JLI Extracted: 06/26/97 File: OR8931
Instrument: HPMS4 Injected: 06/30/97 Factor: 330 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	7800	60000
205-99-2	Benzo (b) fluoranthene	9100	60000
207-08-9	Benzo (k) fluoranthene	7800	60000
191-24-2	Benzo (g, h, i) perylene	5300	60000
50-32-8	Benzo (a) pyrene	8700	60000
218-01-9	Chrysene	9100	60000
53-70-3	Dibenzo (a, h) anthracene	520J	60000
193-39-5	Indeno (1, 2, 3-cd) pyrene	5300	60000

SURROGATES:

Nitrobenzene-d5	<u>41.6</u>	% Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>63.2</u>	% Recovery	(30% - 115%)
p-Terphenyl-d14	<u>71.5</u>	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:



DAMES & MOORE

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644 Linn Street, Suite 501

Cincinnati, Ohio 45203

(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. <u>ORMET REMEDIATION</u>						NO. OF CONTAINERS	ANALYTICAL PARAMETERS <u>PCB METHOD 8080</u> <u>PAH</u>								FORWARD RESULTS TO:	
		LOCATION <u>HANNIBAL OHIO</u>																
SAMPLERS: <u>D.R. SHATTUCK</u> (NAME) <u>[Signature]</u> (SIGNATURE)		LABORATORY: <u>KEMRON</u> ADDRESS: <u>MARIETTA OHIO</u>																
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION									REMARKS:		
SS-25	6/25	11:30 ^A	X		X		CRDA STAGE II	1	X	X								
SS-26		11:45 ^A						1	X	X								
SS-27		11:50 ^A						1	X	X								
SS-28		12:00 ^P						1	X	X								
SS-29		12:05 ^P						1	X	X								
SS-30		3:45 ^P						1	X	X								
SS-31		3:50						1	X	X								
SS-32		3:55						1	X	X								
SS-33		4:20						1	X	X								
SS-34		4:30						1	X	X								
SS-35		4:50						1	X	X								
SS-36		5:00 ^P						1	X	X								
SS-37		5:15 ^P						1	X	X								
SS-38		5:30						1	X	X								
SS-39	6/25	5:45	X		X			1	X	X								
RELINQUISHED BY: <u>D.R. SHATTUCK</u> (NAME) <u>[Signature]</u> (SIGNATURE)		COMPANY: <u>D & M</u>				DATE: <u>6/26/97</u> TIME: <u>12:41 PM</u>		RECEIVED BY: <u>Michael S. Lutz</u> (NAME) <u>[Signature]</u> (SIGNATURE)		COMPANY: <u>KEMRON</u>				DATE: <u>6/26/97</u> TIME: <u>12:41</u>				
RELINQUISHED BY: <u>Michael S. Lutz</u> (NAME) <u>[Signature]</u> (SIGNATURE)		COMPANY: <u>Kemron</u>				DATE: <u>6/26/97</u> TIME: <u>1:35</u>		RECEIVED BY: <u>Angelina Scott</u> (NAME) <u>[Signature]</u> (SIGNATURE)		COMPANY: <u>Kemron</u>				DATE: <u>6/26/97</u> TIME: <u>1:35</u>				

forms/RECORD

Paul Turner, H. Lave, and, not for 44



JAMES & MOORE

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644 Linn Street, Suite 501

Cincinnati, Ohio 45203

(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. <u>ORMET REMEDIATION</u>						NO. OF CONTAINERS	ANALYTICAL PARAMETERS PCB METHOD 8080 PAH	FORWARD RESULTS TO:					
LOCATION <u>HANNIBAL, OHIO</u>		SAMPLERS: <u>DR SHATTUCK</u> (NAME) <u>DR Shattuck</u> (SIGNATURE)								LABORATORY: <u>KEMRON</u> ADDRESS: <u>MARIETTA, OH.</u>					
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION			REMARKS:					
SS-40	6/25	6:15P	X		X		CRDA STAGE II	1	X	X					
SPS-1A	6/25	6:30P	X		X		CRDA STOCK PILE	1	X	X					
SPS-1B	6/25	6:30	X		X		" "	1	X	X					
SPS-1C	6/25	6:30	X		X		" "	1	X	X					
EW-7	6/25	3:30P		X		X		1		X					
EW-8	6/25	4:50P		X		X		1		X					
RELINQUISHED BY: <u>DR SHATTUCK</u> (NAME) <u>DR Shattuck</u> (SIGNATURE)		COMPANY: <u>D&M</u>				DATE: <u>6/26/97</u> TIME: <u>12:41 PM</u>		RECEIVED BY: <u>Michael Wetz</u> (NAME) <u>Michael Wetz</u> (SIGNATURE)		COMPANY: <u>KEMRON</u>		DATE: <u>6/26/97</u> TIME: <u>12:41</u>			
RELINQUISHED BY: <u>Michael Wetz</u> (NAME) <u>Michael Wetz</u> (SIGNATURE)		COMPANY: <u>Kemron</u>				DATE: <u>6/26/97</u> TIME: <u>1:35</u>		RECEIVED BY: <u>Angelina Scott</u> (NAME) <u>Angelina Scott</u> (SIGNATURE)		COMPANY: <u>Kemron</u>		DATE: <u>6/26/97</u> TIME: <u>1:35</u>			

forms/RECORD

Amelia Tomini 4015 Xenia

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

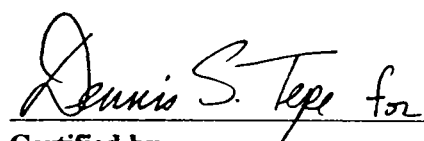
Login #: 97-06-611
Date Received: 06/27/97
Date Completed: 07/03/97
Date Reported: 07/03/97 18:42
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-41	02	SS-42
03	SS-43	04	SS-44
05	TRIP BLANK #1	06	TRIP BLANK #2

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-41 Collected: 06/27/97 1030 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	90	1	% wt.	07/01/97 CLH	D2216-90

SAMPLE ID: 02 SS-42 Collected: 06/27/97 1145 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	86	1	% wt.	07/01/97 CLH	D2216-90

SAMPLE ID: 03 SS-43 Collected: 06/27/97 1150 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	92	1	% wt.	07/01/97 CLH	D2216-90

SAMPLE ID: 04 SS-44 Collected: 06/27/97 1200 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	90	1	% wt.	07/01/97 CLH	D2216-90

SAMPLE ID: 05 TRIP BLANK #1 Collected: 06/27/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	90	1	% wt.	07/01/97 CLH	D2216-90

SAMPLE ID: 06 TRIP BLANK #2 Collected: 06/27/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	89	1	% wt.	07/01/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-06-611
July 3, 1997 18:42

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 9

Test Code: **808-PCB-S**
Sample Description: **SS-44**
Test Description: **PCB's (Soil)**

Lab No: **04**

Collected: **06/27/97 1200**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **06/30/97** File: **035F0101**
Instrument: **HP10** Injected: **07/02/97** Factor: **165** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	92
11104-28-2	Aroclor-1221	ND	92
11141-16-5	Aroclor-1232	ND	92
53469-21-9	Aroclor-1242	ND	92
12672-29-6	Aroclor-1248	510	92
11097-69-1	Aroclor-1254	ND	180
11096-82-5	Aroclor-1260	ND	180

SURROGATES:

Decachlorobiphenyl	<u>83.2</u> % Recovery	(30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>70.7</u> % Recovery	(29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-611
July 3, 1997 18:42

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: 827-PAH
Sample Description: SS-44
Test Description: Polyaromatic Hydrocarbons

Lab No: 04

Collected: 06/27/97 1200
Category: Soil
Method: 8270B\3550

Analyst: MDC Extracted: 06/30/97 File: OR3492
Instrument: HPMS5 Injected: 07/01/97 Factor: 330 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
91-20-3	Naphthalene	ND	1800
208-96-8	Acenaphthylene	ND	1800
83-32-9	Acenaphthene	ND	1800
86-73-7	Fluorene	ND	1800
85-01-8	Phenanthrene	3900	1800
120-12-7	Anthracene	ND	1800
206-44-0	Fluoranthene	8100	1800
129-00-0	Pyrene	7200	1800
56-55-3	Benzo(a)anthracene	5300	1800
218-01-9	Chrysene	6000	1800
205-99-2	Benzo(b)fluoranthene	7000	1800
207-08-9	Benzo(k)fluoranthene	4600	1800
50-32-8	Benzo(a)pyrene	6200	1800
193-39-5	Indeno(1,2,3-cd)pyrene	4300	1800
53-70-3	Dibenzo(a,h)anthracene	ND	1800
191-24-2	Benzo(g,h,i)perylene	4800	1800

SURROGATES:

Nitrobenzene-d5	46.6	% Recovery	(23% - 120%)
2-Fluorobiphenyl	57.4	% Recovery	(30% - 115%)
p-Terphenyl-d14	57.8	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-611
July 3, 1997 18:42

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 13

Test Code: **808-PCB-S**
Sample Description: **TRIP BLANK #2**
Test Description: **PCB's (Soil)**

Lab No: **06**

Collected: **06/27/97**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS**
Instrument: **HP10**

Extracted: **06/30/97**
Injected: **07/02/97**

File: **037F0101**
Factor: **330**

Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	190
11104-28-2	Aroclor-1221	ND	190
11141-16-5	Aroclor-1232	ND	190
53469-21-9	Aroclor-1242	ND	190
12672-29-6	Aroclor-1248	670	190
11097-69-1	Aroclor-1254	ND	370
11096-82-5	Aroclor-1260	ND	370

SURROGATES:

Decachlorobiphenyl	92.2 % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	78.2 % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-06-611
July 3, 1997 18:42

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: **827-PAH**
Sample Description: **TRIP BLANK #2**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **06**

Collected: **06/27/97**
Category: **Soil**
Method: **8270B\3550**

Analyst: **MDC** Extracted: **06/30/97** File: **OR3493**
Instrument: **HPMS5** Injected: **07/01/97** Factor: **330** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
91-20-3	Naphthalene	ND	1900
208-96-8	Acenaphthylene	ND	1900
83-32-9	Acenaphthene	ND	1900
86-73-7	Fluorene	ND	1900
85-01-8	Phenanthrene	370	1900
120-12-7	Anthracene	ND	1900
206-44-0	Fluoranthene	11000	1900
129-00-0	Pyrene	10000	1900
56-55-3	Benzo (a) anthracene	7400	1900
218-01-9	Chrysene	9700	1900
205-99-2	Benzo (b) fluoranthene	8500	1900
207-08-9	Benzo (k) fluoranthene	6500	1900
50-32-8	Benzo (a) pyrene	7400	1900
193-39-5	Indeno (1,2,3-cd) pyrene	4700	1900
53-70-3	Dibenzo (a,h) anthracene	ND	1900
191-24-2	Benzo (g,h,i) perylene	5300	1900

SURROGATES:

Nitrobenzene-d5	46	% Recovery	(23% - 120%)
2-Fluorobiphenyl	55.8	% Recovery	(30% - 115%)
p-Terphenyl-d14	55.8	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

CASE NARRATIVE
L9706611

827-PAH

No difficulties were encountered during the analysis of these samples.



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644 Linn Street, Suite 501

Cincinnati, Ohio 45203

(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. <u>ORMET REMEDIATION</u>						NO. OF CONTAINERS	ANALYTICAL PARAMETERS PCB METH 8080 PAH	FORWARD RESULTS TO:					
		LOCATION <u>HANNIBAL OHIO</u>													
SAMPLERS: <u>DA. SHATTUCK</u> (NAME) <u>[Signature]</u> (SIGNATURE)		LABORATORY: <u>KEMRON</u> ADDRESS: <u>MARIETTA OHIO</u>													
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION								REMARKS:
SS-17 B	6/27	9:45 ^A	X		X		CRDA STAGE I	1	X						PUSH
SS-41		10:30 ^A	X		X		CRDA STAGE II	1	X	X					
SS-42		11:45 ^A	X		X		" "	1	X	X					
SS-43		11:50 ^A	X		X		" "	1	X	X					
SS-44		12:03 ^P	X		X		CRDA STAGE II	1	X	X					
EW-8				X		X		1	X						*Was not rec'd 8/4/27
TRIP BLANK #1	6/27		X	X	X			1	X	X					
TRIP BLANK #2	6/27		X		X			1	X	X					
RELINQUISHED BY: <u>DR. SHATTUCK</u> (NAME) <u>[Signature]</u> (SIGNATURE)		COMPANY: <u>D & M</u>				DATE: <u>6/27/07</u> TIME: <u>1455</u>		RECEIVED BY: _____ (NAME) _____ (SIGNATURE)		COMPANY: _____		DATE: _____ TIME: _____			
RELINQUISHED BY: _____ (NAME) _____ (SIGNATURE)		COMPANY: _____				DATE: _____ TIME: _____		RECEIVED BY: <u>Angelina P. Scott</u> (NAME) <u>Angelina P. Scott</u> (SIGNATURE)		COMPANY: <u>Kemron</u>		DATE: <u>6/27</u> TIME: <u>1455</u>			

forms/RECORD

Per Temp. 8.0 / 5.8 rec'd until 144.2

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

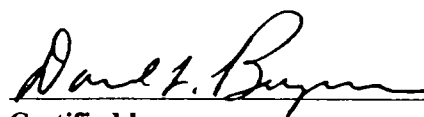
Login #: 97-07-123
Date Received: 07/03/97
Date Completed: 07/10/97
Date Reported: 07/10/97 14:27
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-45	02	SS-46
03	SS-47	04	SS-48
05	SS-21	06	SS-52
07	SS-53	08	SS-57
09	TRIP BLANK #4	10	TRIP BLANK #5

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-45 Collected: 07/02/97 1845 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	86	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 02 SS-46 Collected: 07/02/97 1850 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	85	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 03 SS-47 Collected: 07/02/97 1900 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	86	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 04 SS-48 Collected: 07/02/97 1855 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 05 SS-21 Collected: 07/02/97 2035 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 06 SS-52 Collected: 07/02/97 1950 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	70	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 07 SS-53 Collected: 07/02/97 2000 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	76	1	% wt.	07/08/97 CLH	D2216-90

NOTES AND DEFINITIONS:

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

SAMPLE ID: 08 SS-57 Collected: 07/02/97 2025 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 09 TRIP BLANK #4 Collected: 07/02/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 10 TRIP BLANK #5 Collected: 07/02/97 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	75	1	% wt.	07/08/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-07-123
July 10, 1997 14:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: **808-PCB-S**
Sample Description: **SS-45**
Test Description: **PCB's (Soil)**

Lab No: **01**

Collected: **07/02/97 1845**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **07/07/97** File: **025R0101**
Instrument: **HP10** Injected: **07/10/97** Factor: **165** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	96
11104-28-2	Aroclor-1221	ND	96
11141-16-5	Aroclor-1232	ND	96
53469-21-9	Aroclor-1242	ND	96
12672-29-6	Aroclor-1248	580	96
11097-69-1	Aroclor-1254	ND	190
11096-82-5	Aroclor-1260	ND	190

SURROGATES:

Decachlorobiphenyl	<u>79.4</u> % Recovery	(30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>82.7</u> % Recovery	(29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-123
July 10, 1997 14:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: **808-PCB-S**
Sample Description: **SS-46**
Test Description: **PCB's (Soil)**

Lab No: **02**

Collected: **07/02/97 1850**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **07/07/97** File: **026R0101**
Instrument: **HP10** Injected: **07/10/97** Factor: **330** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	190
11104-28-2	Aroclor-1221	ND	190
11141-16-5	Aroclor-1232	ND	190
53469-21-9	Aroclor-1242	ND	190
12672-29-6	Aroclor-1248	740	190
11097-69-1	Aroclor-1254	ND	390
11096-82-5	Aroclor-1260	ND	390

SURROGATES:

Decachlorobiphenyl	<u>88.4</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>85.7</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-123
July 10, 1997 14:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 8

Test Code: 808-PCB-S
Sample Description: SS-21
Test Description: PCB's (Soil)

Lab No: 05

Collected: 07/02/97 2035
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 07/07/97 File: 029R0101
Instrument: HP10 Injected: 07/10/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	19
11104-28-2	Aroclor-1221	ND	19
11141-16-5	Aroclor-1232	ND	19
53469-21-9	Aroclor-1242	ND	19
12672-29-6	Aroclor-1248	48	19
11097-69-1	Aroclor-1254	ND	38
11096-82-5	Aroclor-1260	ND	38

SURROGATES:

Decachlorobiphenyl	88.6 % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>74.1</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-123
July 10, 1997 14:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 9

Test Code: 808-PCB-S
Sample Description: SS-52
Test Description: PCB's (Soil)

Lab No: 06

Collected: 07/02/97 1950
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 07/07/97 File: 030R0101
Instrument: HP10 Injected: 07/10/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	24
11104-28-2	Aroclor-1221	ND	24
11141-16-5	Aroclor-1232	ND	24
53469-21-9	Aroclor-1242	ND	24
12672-29-6	Aroclor-1248	71	24
11097-69-1	Aroclor-1254	ND	47
11096-82-5	Aroclor-1260	ND	47

SURROGATES:

Decachlorobiphenyl	<u>76.7</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>67.8</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-123
July 10, 1997 14:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 10

Test Code: **808-PCB-S**
Sample Description: **SS-53**
Test Description: **PCB's (Soil)**

Lab No: **07**

Collected: **07/02/97 2000**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **07/07/97** File: **031R0101**
Instrument: **HP10** Injected: **07/10/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	22
11104-28-2	Aroclor-1221	ND	22
11141-16-5	Aroclor-1232	ND	22
53469-21-9	Aroclor-1242	ND	22
12672-29-6	Aroclor-1248	47	22
11097-69-1	Aroclor-1254	ND	43
11096-82-5	Aroclor-1260	ND	43

SURROGATES:

Decachlorobiphenyl	<u>79.8</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>77.8</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-123
July 10, 1997 14:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 11

Test Code: **808-PCB-S**
Sample Description: **SS-57**
Test Description: **PCB's (Soil)**

Lab No: **08**

Collected: **07/02/97 2025**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **07/07/97** File: **037R0101**
Instrument: **HP10** Injected: **07/10/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	20
11104-28-2	Aroclor-1221	ND	20
11141-16-5	Aroclor-1232	ND	20
53469-21-9	Aroclor-1242	ND	20
12672-29-6	Aroclor-1248	160	20
11097-69-1	Aroclor-1254	ND	41
11096-82-5	Aroclor-1260	ND	41

SURROGATES:

Decachlorobiphenyl	<u>83.7</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>69.8</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-123
July 10, 1997 14:27

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 13

Test Code: 808-PCB-S
Sample Description: TRIP BLANK #5
Test Description: PCB's (Soil)

Lab No: 10

Collected: 07/02/97
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 07/07/97 File: 034R0101
Instrument: HP10 Injected: 07/10/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	22
11104-28-2	Aroclor-1221	ND	22
11141-16-5	Aroclor-1232	ND	22
53469-21-9	Aroclor-1242	ND	22
12672-29-6	Aroclor-1248	44	22
11097-69-1	Aroclor-1254	ND	44
11096-82-5	Aroclor-1260	ND	44

SURROGATES:

Decachlorobiphenyl	<u>74.6</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>69.5</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit



JAMES & MOORE

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644 Linn Street, Suite 501

Cincinnati, Ohio 45203

(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. <u>ORMET REMEDIATION</u>						NO. OF CONTAINERS	ANALYTICAL PARAMETERS PCB METHOD 8060 PAH	FORWARD RESULTS TO:					
		LOCATION <u>HANNIBAL OHIO</u>													
SAMPLERS: <u>DR SHATTUCK</u> (NAME) <u>DR Shattuck</u> (SIGNATURE)		LABORATORY: <u>KEMRON</u> ADDRESS: <u>MARIETTA OHIO</u>													
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION								REMARKS
SS-45	7/2	6:45 ^{PM}	X		X		CRDA STAGE II	1	/	/					
SS-46	↓	6:50	X		X			1	/	/					
SS-47	↓	7:00	X		X			1	/	/					
SS-48	7/2	6:55 ^{PM}	X		X			1	/	/					
SS-21	7/2	8:35 ^{PM}	X		X		CRDA STAGE II	1	/	/					
SS-52	↓	7:50	X		X			1	/	/					
SS-53	↓	8:00 ^{PM}	X		X			1	/	/					
SS-57	7/2	8:25 ^{PM}	X		X		CRDA STAGE II	1	/	/					
EW-10	7/2	9:00 ^{PM}		X		X		1	/	/					
TRIP BLANK #4	7/2		X		X			1	/	/					Shower & intact
TRIP BLANK #5	7/2		X		X			1	/	/					Cable, lamp, etc.
RELINQUISHED BY: <u>DR SHATTUCK</u> (NAME) <u>DR Shattuck</u> (SIGNATURE)	COMPANY: <u>D & M</u>		DATE: <u>7/3/97</u> TIME: <u>3:50am</u>		RECEIVED BY: <u>Michael Wetz</u> (NAME) <u>Michael Wetz</u> (SIGNATURE)		COMPANY: _____		DATE: <u>7/3/97</u> TIME: _____						
RELINQUISHED BY: <u>Michael Wetz</u> (NAME) <u>Michael Wetz</u> (SIGNATURE)	COMPANY: <u>Kemron</u>		DATE: <u>7/3/97</u> TIME: <u>4:50am</u>		RECEIVED BY: <u>Brenda Gregory</u> (NAME) <u>Brenda Gregory</u> (SIGNATURE)		COMPANY: <u>Kemron</u>		DATE: <u>7/3/97</u> TIME: <u>1650</u>						

forms/RECORD

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

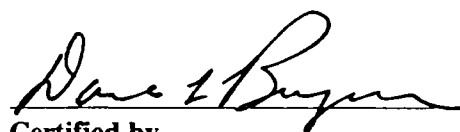
Login #: 97-07-121
Date Received: 07/03/97
Date Completed: 07/10/97
Date Reported: 07/10/97 14:29
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-58	02	SS-59
03	SS-60	04	SS-61
05	SS-62	06	SS-66

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-58 Collected: 07/03/97 1435 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 02 SS-59 Collected: 07/03/97 1445 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	89	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 03 SS-60 Collected: 07/03/97 1455 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	90	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 04 SS-61 Collected: 07/03/97 1505 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	89	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 05 SS-62 Collected: 07/03/97 1510 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 06 SS-66 Collected: 07/03/97 1505 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	07/07/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-07-121
July 10, 1997 14:29

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-58
Test Description: PCB's (Soil)

Lab No: 01

Collected: 07/03/97 1435
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 07/07/97 File: 015R0101
Instrument: HP10 Injected: 07/09/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	19
11104-28-2	Aroclor-1221	ND	19
11141-16-5	Aroclor-1232	ND	19
53469-21-9	Aroclor-1242	ND	19
12672-29-6	Aroclor-1248	210	19
11097-69-1	Aroclor-1254	ND	38
11096-82-5	Aroclor-1260	ND	38

SURROGATES:

Decachlorobiphenyl	<u>69.2</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>61.2</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-121
July 10, 1997 14:29

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: 808-PCB-S
Sample Description: SS-59
Test Description: PCB's (Soil)

Lab No: 02

Collected: 07/03/97 1445
Category: Soil
Method: 8081\3550

Analyst: MLS
Instrument: HP10

Extracted: 07/07/97
Injected: 07/09/97

File: 018R0101
Factor: 165

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	93
11104-28-2	Aroclor-1221	ND	93
11141-16-5	Aroclor-1232	ND	93
53469-21-9	Aroclor-1242	ND	93
12672-29-6	Aroclor-1248	470	93
11097-69-1	Aroclor-1254	ND	190
11096-82-5	Aroclor-1260	ND	190

SURROGATES:

Decachlorobiphenyl	<u>93.3</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>74.2</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-121
July 10, 1997 14:29

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: **808-PCB-S**
Sample Description: **SS-60**
Test Description: **PCB's (Soil)**

Lab No: **03**

Collected: **07/03/97 1455**

Category: **Soil**

Method: **8081\3550**

Analyst: **MLS**
Instrument: **HP10**

Extracted: **07/07/97**
Injected: **07/09/97**

File: **019R0101**
Factor: **33**

Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	18
11104-28-2	Aroclor-1221	ND	18
11141-16-5	Aroclor-1232	ND	18
53469-21-9	Aroclor-1242	ND	18
12672-29-6	Aroclor-1248	78	18
11097-69-1	Aroclor-1254	ND	37
11096-82-5	Aroclor-1260	ND	37

SURROGATES:

Decachlorobiphenyl	<u>79.2</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>64.2</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-121
July 10, 1997 14:29

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 6

Test Code: 808-PCB-S
Sample Description: SS-61
Test Description: PCB's (Soil)

Lab No: 04

Collected: 07/03/97 1505
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 07/07/97 File: 020R0101
Instrument: HP10 Injected: 07/09/97 Factor: 165 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	93
11104-28-2	Aroclor-1221	ND	93
11141-16-5	Aroclor-1232	ND	93
53469-21-9	Aroclor-1242	ND	93
12672-29-6	Aroclor-1248	420	93
11097-69-1	Aroclor-1254	ND	190
11096-82-5	Aroclor-1260	ND	190

SURROGATES:

Decachlorobiphenyl	<u>86.7</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>75.8</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-121
July 10, 1997 14:29

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 8

Test Code: 808-PCB-S
Sample Description: SS-66
Test Description: PCB's (Soil)

Lab No: 06

Collected: 07/03/97 1505
Category: Soil
Method: 8081\3550

Analyst: MLS
Instrument: HP10

Extracted: 07/07/97
Injected: 07/09/97

File: 022R0101
Factor: 33

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	20
11104-28-2	Aroclor-1221	ND	20
11141-16-5	Aroclor-1232	ND	20
53469-21-9	Aroclor-1242	ND	20
12672-29-6	Aroclor-1248	220	20
11097-69-1	Aroclor-1254	ND	41
11096-82-5	Aroclor-1260	ND	41

SURROGATES:

Decachlorobiphenyl	<u>74.3</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>65.1</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit



644 Linn Street, Suite 501

Cincinnati, Ohio 45203

(513) 651-3440 **Гар** (513) 651-3452

CHAIN-OF-CUSTODY RECORD

forms/RECORD

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

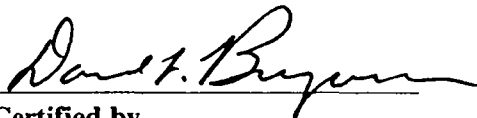
Login #: 97-07-124
Date Received: 07/03/97
Date Completed: 07/11/97
Date Reported: 07/11/97 13:10
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-45	02	SS-46
03	SS-47	04	SS-48
05	SS-21	06	SS-52
07	SS-53	08	SS-57
09	EW-10	10	TRIP BLANK #4
11	TRIP BLANK #5		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-45 Collected: 07/02/97 1845 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	86	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 02 SS-46 Collected: 07/02/97 1850 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	85	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 03 SS-47 Collected: 07/02/97 1900 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	86	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 04 SS-48 Collected: 07/02/97 1855 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 05 SS-21 Collected: 07/02/97 2035 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 06 SS-52 Collected: 07/02/97 1950 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	70	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 07 SS-53 Collected: 07/02/97 2000 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	76	1	% wt.	07/08/97 CLH	D2216-90

NOTES AND DEFINITIONS:

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

SAMPLE ID: 08 SS-57 Collected: **07/02/97 2025** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 10 TRIP BLANK #4 Collected: **07/02/97** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/08/97 CLH	D2216-90

SAMPLE ID: 11 TRIP BLANK #5 Collected: **07/02/97** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	75	1	% wt.	07/08/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-07-124
July 11, 1997 13:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: **827-PAH-ORMET**
Sample Description: **SS-45**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **01**

Collected: **07/02/97 1845**
Category: **Soil**
Method: **8270\3550**

Analyst: **JLI** Extracted: **07/07/97** File: **OR705**
Instrument: **HPMS7** Injected: **07/09/97** Factor: **1** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	2400	200
205-99-2	Benzo (b) fluoranthene	3300	200
207-08-9	Benzo (k) fluoranthene	2000	200
191-24-2	Benzo (g, h, i) perylene	2000	200
50-32-8	Benzo (a) pyrene	2900	200
218-01-9	Chrysene	2600	200
53-70-3	Dibenzo (a, h) anthracene	780	200
193-39-5	Indeno (1, 2, 3-cd) pyrene	2000	200

SURROGATES:

Nitrobenzene-d5	<u>48.5</u>	% Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>61.4</u>	% Recovery	(30% - 115%)
p-Terphenyl-d14	<u>81.6</u>	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-124
July 11, 1997 13:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: 827-PAH-ORMET
Sample Description: SS-46
Test Description: Polyaromatic Hydrocarbons

Lab No: 02

Collected: 07/02/97 1850
Category: Soil
Method: 8270\3550

Analyst: JLI Extracted: 07/07/97 File: OR706
Instrument: HPMS7 Injected: 07/09/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	2200	200
205-99-2	Benzo (b) fluoranthene	2600	200
207-08-9	Benzo (k) fluoranthene	2100	200
191-24-2	Benzo (g, h, i) perylene	1800	200
50-32-8	Benzo (a) pyrene	2700	200
218-01-9	Chrysene	2400	200
53-70-3	Dibenzo (a, h) anthracene	690	200
193-39-5	Indeno (1, 2, 3 -cd) pyrene	1600	200

SURROGATES:

Nitrobenzene-d5	<u>47.7</u>	% Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>59</u>	% Recovery	(30% - 115%)
p-Terphenyl-d14	<u>82.9</u>	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-124
July 11, 1997 13:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 6

Test Code: 827-PAH-ORMET
Sample Description: SS-47
Test Description: Polyaromatic Hydrocarbons

Lab No: 03

Collected: 07/02/97 1900
Category: Soil
Method: 8270\3550

Analyst: JLI Extracted: 07/07/97 File: OR707
Instrument: HPMS7 Injected: 07/09/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	2000	200
205-99-2	Benzo (b) fluoranthene	2400	200
207-08-9	Benzo (k) fluoranthene	1700	200
191-24-2	Benzo (g, h, i) perylene	1500	200
50-32-8	Benzo (a) pyrene	2300	200
218-01-9	Chrysene	2200	200
53-70-3	Dibenzo (a, h) anthracene	570	200
193-39-5	Indeno (1, 2, 3-cd) pyrene	1400	200

SURROGATES:

Nitrobenzene-d5	<u>34</u>	% Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>44.2</u>	% Recovery	(30% - 115%)
p-Terphenyl-d14	<u>65.5</u>	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-124
July 11, 1997 13:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 7

Test Code: 827-PAH-ORMET
Sample Description: SS-48
Test Description: Polyaromatic Hydrocarbons

Lab No: 04

Collected: 07/02/97 1855
Category: Soil
Method: 8270\3550

Analyst: JLI Extracted: 07/07/97 File: OR687
Instrument: HPMS7 Injected: 07/09/97 Factor: 10 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo(a)anthracene	4300	2000
205-99-2	Benzo(b)fluoranthene	4600	2000
207-08-9	Benzo(k)fluoranthene	3400	2000
191-24-2	Benzo(g,h,i)perylene	2800	2000
50-32-8	Benzo(a)pyrene	4600	2000
218-01-9	Chrysene	4400	2000
53-70-3	Dibenzo(a,h)anthracene	1100J	2000
193-39-5	Indeno(1,2,3-cd)pyrene	3200	2000

SURROGATES:

Nitrobenzene-d5	<u>30.4</u>	% Recovery (23% - 120%)
2-Fluorobiphenyl	<u>46.8</u>	% Recovery (30% - 115%)
p-Terphenyl-d14	<u>68.6</u>	% Recovery (18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-124
July 11, 1997 13:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 8

Test Code: **827-PAH-ORMET**
Sample Description: **SS-21**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **05**

Collected: **07/02/97 2035**
Category: **Soil**
Method: **8270\3550**

Analyst: **JLI** Extracted: **07/07/97** File: **OR688**
Instrument: **HPMS7** Injected: **07/09/97** Factor: **10** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	6300	2000
205-99-2	Benzo (b) fluoranthene	6600	2000
207-08-9	Benzo (k) fluoranthene	5700	2000
191-24-2	Benzo (g, h, i) perylene	4600	2000
50-32-8	Benzo (a) pyrene	7200	2000
218-01-9	Chrysene	6600	2000
53-70-3	Dibenzo (a, h) anthracene	1700	2000
193-39-5	Indeno (1, 2, 3-cd) pyrene	4600	2000

SURROGATES:

Nitrobenzene-d5	<u>43.4</u> % Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>64.6</u> % Recovery	(30% - 115%)
p-Terphenyl-d14	<u>78</u> % Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-124
July 11, 1997 13:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 9

Test Code: **827-PAH-ORMET**
Sample Description: **SS-52**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **06**

Collected: **07/02/97 1950**
Category: **Soil**
Method: **8270\3550**

Analyst: **JLI** Extracted: **07/07/97** File: **OR708**
Instrument: **HPMS7** Injected: **07/09/97** Factor: **1** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	2100	240
205-99-2	Benzo (b) fluoranthene	2900	240
207-08-9	Benzo (k) fluoranthene	2000	240
191-24-2	Benzo (g, h, i) perylene	1900	240
50-32-8	Benzo (a) pyrene	2700	240
218-01-9	Chrysene	2400	240
53-70-3	Dibenzo (a, h) anthracene	690	240
193-39-5	Indeno (1, 2, 3-cd) pyrene	1700	240

SURROGATES:

Nitrobenzene-d5	<u>56</u> % Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>70</u> % Recovery	(30% - 115%)
p-Terphenyl-d14	<u>96.4</u> % Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-124
July 11, 1997 13:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 10

Test Code: 827-PAH-ORMET
Sample Description: SS-53
Test Description: Polyaromatic Hydrocarbons

Lab No: 07

Collected: 07/02/97 2000
Category: Soil
Method: 8270\3550

Analyst: JLI
Instrument: HPMS7

Extracted: 07/07/97
Injected: 07/09/97

File: OR709
Factor: 1

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	2400	220
205-99-2	Benzo (b) fluoranthene	3000	220
207-08-9	Benzo (k) fluoranthene	2000	220
191-24-2	Benzo (g, h, i) perylene	2000	220
50-32-8	Benzo (a) pyrene	2900	220
218-01-9	Chrysene	2500	220
53-70-3	Dibenzo (a, h) anthracene	640	220
193-39-5	Indeno (1, 2, 3-cd) pyrene	1800	220

SURROGATES:

Nitrobenzene-d5	<u>46.8</u>	% Recovery (23% - 120%)
2-Fluorobiphenyl	<u>62.3</u>	% Recovery (30% - 115%)
p-Terphenyl-d14	<u>84.5</u>	% Recovery (18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-124
July 11, 1997 13:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 11

Test Code: 827-PAH-ORMET
Sample Description: SS-57
Test Description: Polyaromatic Hydrocarbons

Lab No: 08

Collected: 07/02/97 2025
Category: Soil
Method: 8270\3550

Analyst: JLI Extracted: 07/07/97 File: OR702
Instrument: HPMS7 Injected: 07/09/97 Factor: 10 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	3100	2100
205-99-2	Benzo (b) fluoranthene	3800	2100
207-08-9	Benzo (k) fluoranthene	3500	2100
191-24-2	Benzo (g, h, i) perylene	3100	2100
50-32-8	Benzo (a) pyrene	4200	2100
218-01-9	Chrysene	3500	2100
53-70-3	Dibenzo (a, h) anthracene	1100J	2100
193-39-5	Indeno (1, 2, 3-cd) pyrene	270	2100

SURROGATES:

Nitrobenzene-d5	42.2	% Recovery	(23% - 120%)
2-Fluorobiphenyl	65.4	% Recovery	(30% - 115%)
p-Terphenyl-d14	75.8	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-124
July 11, 1997 14:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: **827-PAH-ORMET**
Sample Description: **EW-10**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **09**

Collected: **07/02/97 2100**
Category: **Water**
Method: **8270\3550**

Analyst: **MDC** Extracted: **07/07/97** File: **OR3576**
Instrument: **HPMS5** Injected: **07/08/97** Factor: **2** Units: **ug/L**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo(a)anthracene	ND	10
205-99-2	Benzo(b)fluoranthene	ND	10
207-08-9	Benzo(k)fluoranthene	ND	10
191-24-2	Benzo(g,h,i)perylene	ND	10
50-32-8	Benzo(a)pyrene	ND	10
218-01-9	Chrysene	ND	10
53-70-3	Dibenzo(a,h)anthracene	ND	10
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10

SURROGATES:

Nitrobenzene-d5	<u>54.7</u>	% Recovery	(35% - 114%)
2-Fluorobiphenyl	<u>62.9</u>	% Recovery	(43% - 116%)
p-Terphenyl-d14	<u>106</u>	% Recovery	(33% - 141%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **827-PAH-ORMET**
Sample Description: **TRIP BLANK #4**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **10**

Collected: **07/02/97**
Category: **Soil**
Method: **8270\3550**

Analyst: **JLI**
Instrument: **HPMS7**

Extracted: **07/07/97**
Injected: **07/09/97**

File: **OR703**
Factor: **10**

Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	5600	2000
205-99-2	Benzo (b) fluoranthene	5900	2000
207-08-9	Benzo (k) fluoranthene	4900	2000
191-24-2	Benzo (g, h, i) perylene	3800	2000
50-32-8	Benzo (a) pyrene	6200	2000
218-01-9	Chrysene	5700	2000
53-70-3	Dibenzo (a, h) anthracene	1500J	2000
193-39-5	Indeno (1, 2, 3-cd) pyrene	3600	2000

SURROGATES:

Nitrobenzene-d5	<u>38.6</u> % Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>54</u> % Recovery	(30% - 115%)
p-Terphenyl-d14	<u>76.8</u> % Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-124
July 11, 1997 13:10

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 14

Test Code: 827-PAH-ORMET
Sample Description: TRIP BLANK #5
Test Description: Polyaromatic Hydrocarbons

Lab No: 11

Collected: 07/02/97
Category: Soil
Method: 8270\3550

Analyst: JLI Extracted: 07/07/97 File: OR721
Instrument: HPMS7 Injected: 07/10/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo(a)anthracene	2100	230
205-99-2	Benzo(b)fluoranthene	3100	230
207-08-9	Benzo(k)fluoranthene	2100	230
191-24-2	Benzo(g,h,i)perylene	2400	230
50-32-8	Benzo(a)pyrene	2900	230
218-01-9	Chrysene	2400	230
53-70-3	Dibenzo(a,h)anthracene	870	230
193-39-5	Indeno(1,2,3-cd)pyrene	2100	230

SURROGATES:

Nitrobenzene-d5	<u>49.3</u>	% Recovery (23% - 120%)
2-Fluorobiphenyl	<u>65.7</u>	% Recovery (30% - 115%)
p-Terphenyl-d14	<u>90.9</u>	% Recovery (18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

644 Linn Street, Suite 501
Cincinnati, Ohio 45203
(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. ORMET REMEDIATION						NO. OF CONTAINERS	ANALYTICAL PARAMETERS PCB METHOD 8060 PAH	FORWARD RESULTS TO:					
		LOCATION HANNIBAL OHIO													
SAMPLERS: DR SHATTUCK (NAME) (SIGNATURE)		LABORATORY: KEMRON ADDRESS: MARIETTA OHIO													
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION								REMARKS:
SS-45	7/2	6:45P	X		X		CRDA STAGE II	1	✓	✓					
SS-46		6:50	X		X			1	✓	✓					
SS-47	✓	7:00	X		✓			1	✓	✓					
SS-48	7/2	6:50P	X		X			1	✓	✓					
SS-21	7/2	8:35P	X		X		CRDA STAGE II	1	✓	✓					
SS-52		7:50	X		X			1	✓	✓					
SS-53	✓	8:00P	X		X			1	✓	✓					
SS-57	7/2	8:25P	X		X		CRDA STAGE II	1	✓	✓					
EW-10	7/2	9:00P		X		X		1		✓					
TRIP PLANE #4	7/2		X		X			1	✓	✓					Forwarded to lab
TRIP PLANE #5	7/2		X		X			1	✓	✓					Forwarded to lab
RELINQUISHED BY: DR SHATTUCK (NAME) (SIGNATURE)		COMPANY: D&M				DATE: 7/2/97 TIME: 1:00pm	RECEIVED BY: Michael L. [Signature] (NAME) (SIGNATURE)		COMPANY: [Signature]				DATE: 7/2/97 TIME: [Signature]		
RELINQUISHED BY: Michael L. [Signature] (NAME) (SIGNATURE)		COMPANY: Kemron				DATE: 7/2/97 TIME: 1:30pm	RECEIVED BY: [Signature] (NAME) (SIGNATURE)		COMPANY: [Signature]				DATE: 7/2/97 TIME: 1:30		

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

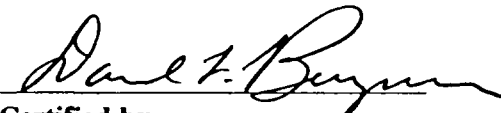
Login #: 97-07-122
Date Received: 07/03/97
Date Completed: 07/10/97
Date Reported: 07/10/97 14:42
Work ID: ORMET REMEDIATION

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-58	02	SS-59
03	SS-60	04	SS-61
05	SS-62	06	SS-66
07	EW-11		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-58 Collected: 07/03/97 1435 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 02 SS-59 Collected: 07/03/97 1445 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	89	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 03 SS-60 Collected: 07/03/97 1455 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	90	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 04 SS-61 Collected: 07/03/97 1505 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	89	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 05 SS-62 Collected: 07/03/97 1510 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	87	1	% wt.	07/07/97 CLH	D2216-90

SAMPLE ID: 06 SS-66 Collected: 07/03/97 1505 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	81	1	% wt.	07/07/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-07-122
July 10, 1997 14:43

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: **827-PAH-ORMET**
Sample Description: **EW-11**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **07**

Collected: **07/03/97 1400**
Category: **Water**
Method: **8270\3550**

Analyst: **MDC** Extracted: **07/07/97** File: **OR3575**
Instrument: **HPMS5** Injected: **07/08/97** Factor: **1** Units: **ug/L**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	ND	5
205-99-2	Benzo (b) fluoranthene	ND	5
207-08-9	Benzo (k) fluoranthene	ND	5
191-24-2	Benzo (g, h, i) perylene	ND	5
50-32-8	Benzo (a) pyrene	ND	5
218-01-9	Chrysene	ND	5
53-70-3	Dibenzo (a, h) anthracene	ND	5
193-39-5	Indeno (1, 2, 3-cd) pyrene	ND	5

SURROGATES:

Nitrobenzene-d5	<u>48.8</u>	% Recovery	(35% - 114%)
2-Fluorobiphenyl	<u>56.2</u>	% Recovery	(43% - 116%)
p-Terphenyl-d14	<u>106</u>	% Recovery	(33% - 141%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-122
July 10, 1997 15:21

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 827-PAH-ORMET
Sample Description: SS-58
Test Description: Polyaromatic Hydrocarbons

Lab No: 01

Collected: 07/03/97 1435
Category: Soil
Method: 8270\3550

Analyst: JLI Extracted: 07/07/97 File: OR676
Instrument: HPMS7 Injected: 07/08/97 Factor: 10 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo(a)anthracene	2600	2000
205-99-2	Benzo(b)fluoranthene	3400	2000
207-08-9	Benzo(k)fluoranthene	2400	2000
191-24-2	Benzo(g,h,i)perylene	2300	2000
50-32-8	Benzo(a)pyrene	3300	2000
218-01-9	Chrysene	3000	2000
53-70-3	Dibenzo(a,h)anthracene	850J	2000
193-39-5	Indeno(1,2,3-cd)pyrene	2300	2000

SURROGATES:

Nitrobenzene-d5	<u>38.6</u>	% Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>55.2</u>	% Recovery	(30% - 115%)
p-Terphenyl-d14	<u>78.8</u>	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-122
July 10, 1997 15:21

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: 827-PAH-ORMET
Sample Description: SS-60
Test Description: Polyaromatic Hydrocarbons

Lab No: 03

Collected: 07/03/97 1455
Category: Soil
Method: 8270\3550

Analyst: JLI Extracted: 07/07/97 File: OR680
Instrument: HPMS7 Injected: 07/08/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	2000	190
205-99-2	Benzo (b) fluoranthene	2600	190
207-08-9	Benzo (k) fluoranthene	1400	190
191-24-2	Benzo (g, h, i) perylene	1700	190
50-32-8	Benzo (a) pyrene	2300	190
218-01-9	Chrysene	2000	190
53-70-3	Dibenzo (a, h) anthracene	670	190
193-39-5	Indeno (1, 2, 3-cd) pyrene	1700	190

SURROGATES:

Nitrobenzene-d5	<u>38.5</u>	% Recovery (23% - 120%)
2-Fluorobiphenyl	<u>45.3</u>	% Recovery (30% - 115%)
p-Terphenyl-d14	<u>71</u>	% Recovery (18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-122
July 10, 1997 15:21

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 6

Test Code: **827-PAH-ORMET**
Sample Description: **SS-61**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **04**

Collected: **07/03/97 1505**
Category: **Soil**
Method: **8270\3550**

Analyst: **JLI** Extracted: **07/07/97** File: **OR681**
Instrument: **HPMS7** Injected: **07/08/97** Factor: **1** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	900	190
205-99-2	Benzo (b) fluoranthene	1100	190
207-08-9	Benzo (k) fluoranthene	840	190
191-24-2	Benzo (g, h, i) perylene	820	190
50-32-8	Benzo (a) pyrene	1100	190
218-01-9	Chrysene	980	190
53-70-3	Dibenzo (a, h) anthracene	260	190
193-39-5	Indeno (1, 2, 3-cd) pyrene	820	190

SURROGATES:

Nitrobenzene-d5	<u>38</u> % Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>46.7</u> % Recovery	(30% - 115%)
p-Terphenyl-d14	<u>64.8</u> % Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-122
July 10, 1997 15:21

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 7

Test Code: **827-PAH-ORMET**
Sample Description: **SS-62**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **05**

Collected: **07/03/97 1510**
Category: **Soil**
Method: **8270\3550**

Analyst: **JLI** Extracted: **07/07/97** File: **OR682**
Instrument: **HPMS7** Injected: **07/08/97** Factor: **10** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	2900	2000
205-99-2	Benzo (b) fluoranthene	3600	2000
207-08-9	Benzo (k) fluoranthene	3000	2000
191-24-2	Benzo (g, h, i) perylene	2300	2000
50-32-8	Benzo (a) pyrene	3300	2000
218-01-9	Chrysene	3000	2000
53-70-3	Dibenzo (a, h) anthracene	840J	2000
193-39-5	Indeno (1, 2, 3-cd) pyrene	2300	2000

SURROGATES:

Nitrobenzene-d5	<u>35.8</u>	% Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>51.4</u>	% Recovery	(30% - 115%)
p-Terphenyl-d14	<u>64.4</u>	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **827-PAH-ORMET**
Sample Description: **SS-66**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **06**

Collected: **07/03/97 1505**
Category: **Soil**
Method: **8270\3550**

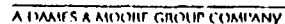
Analyst: **JLI** Extracted: **07/07/97** File: **OR683**
Instrument: **HPMS7** Injected: **07/08/97** Factor: **10** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	5800	2100
205-99-2	Benzo (b) fluoranthene	6700	2100
207-08-9	Benzo (k) fluoranthene	4200	2100
191-24-2	Benzo (g, h, i) perylene	4700	2100
50-32-8	Benzo (a) pyrene	6900	2100
218-01-9	Chrysene	6200	2100
53-70-3	Dibenzo (a, h) anthracene	1700J	2100
193-39-5	Indeno (1, 2, 3-cd) pyrene	4700	2100

SURROGATES:

Nitrobenzene-d5	<u>40.8</u>	% Recovery (23% - 120%)
2-Fluorobiphenyl	<u>55.4</u>	% Recovery (30% - 115%)
p-Terphenyl-d14	<u>70.2</u>	% Recovery (18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:



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CHAIN-OF-CUSTODY RECORD

forms/RECORD

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

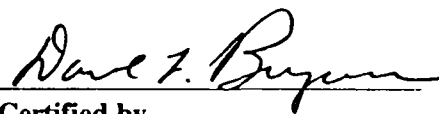
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Date Received: 07/08/97
Date Completed: 07/11/97
Date Reported: 07/11/97 14:42
Work ID: ORMET/07983-836-120

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-63	02	SS-64
03	EW-12		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

Order # 97-07-171
July 11, 1997 14:42

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

Page 2

*This is to certify that the following samples were analyzed using good
laboratory practices to show the following results.*

SAMPLE ID: 01 SS-63 Collected: 07/08/97 1400 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	93	1	% wt.	07/09/97 CLH	D2216-90

SAMPLE ID: 02 SS-64 Collected: 07/08/97 1415 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	93	1	% wt.	07/09/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-07-171
July 11, 1997 14:43

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-63
Test Description: PCB's (Soil)

Lab No: 01

Collected: 07/08/97 1400
Category: Soil
Method: 8081\3550

Analyst: MLS
Instrument: HP10

Extracted: 07/09/97
Injected: 07/10/97

File: 043R0101
Factor: 66

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	35
11104-28-2	Aroclor-1221	ND	35
11141-16-5	Aroclor-1232	ND	35
53469-21-9	Aroclor-1242	ND	35
12672-29-6	Aroclor-1248	510	35
11097-69-1	Aroclor-1254	ND	71
11096-82-5	Aroclor-1260	ND	71

SURROGATES:

Decachlorobiphenyl	<u>68.2</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>57.2</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-171
July 11, 1997 14:43

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: **808-PCB-S**
Sample Description: **SS-64**
Test Description: **PCB's (Soil)**

Lab No: **02**

Collected: **07/08/97 1415**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **07/09/97** File: **042R0101**
Instrument: **HP10** Injected: **07/10/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	18
11104-28-2	Aroclor-1221	ND	18
11141-16-5	Aroclor-1232	ND	18
53469-21-9	Aroclor-1242	ND	18
12672-29-6	Aroclor-1248	24	18
11097-69-1	Aroclor-1254	ND	35
11096-82-5	Aroclor-1260	ND	35

SURROGATES:

Decachlorobiphenyl	<u>74.5</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>60</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-171
July 11, 1997 14:43

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: 808-PCB-W
Sample Description: EW-12
Test Description: PCB's (Water)

Lab No: 03

Collected: 07/08/97 1500
Category: Water
Method: 8081\3510

Analyst: MLS Extracted: 07/09/97 File: 006R0101
Instrument: HP10 Injected: 07/10/97 Factor: 1.2 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	0.60
11104-28-2	Aroclor-1221	ND	0.60
11141-16-5	Aroclor-1232	ND	0.60
53469-21-9	Aroclor-1242	ND	0.60
12672-29-6	Aroclor-1248	ND	0.60
11097-69-1	Aroclor-1254	ND	1.2
11096-82-5	Aroclor-1260	ND	1.2

SURROGATES:

Decachlorobiphenyl	<u>56.2</u> % Recovery (25% - 140%)
2,4,5,6-Tetrachloro-m-xylene	<u>57.8</u> % Recovery (13% - 154%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit



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CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO.		LOCATION		SAMPLERS:		LABORATORY:		ADDRESS:		NO. OF CONTAINERS		ANALYTICAL PARAMETERS		FORWARD RESULTS TO:	
SAMPLE IDENTIFICATION		DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION								REMARKS:	
SS-63	7/8/97	2:00p	X			X		SS-63									
SS-64	7/8/97	2:15p	X			X		SS-64									
RINSATE	7/8/97	3:00p	X				X	EW-12								REFERENCE EW-12	
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RELINQUISHED BY: Ray Vasko
 (NAME)
Raymond Vasko
 (SIGNATURE)

COMPANY: DAMES & MOORE

DATE: 7/8/97
 TIME: 3:00p

RECEIVED BY: John Prince
 (NAME)
John Prince
 (SIGNATURE)

COMPANY: DAMES & MOORE

DATE: 7/8/97
 TIME: 3:00pm

RELINQUISHED BY: John Prince
 (NAME)
John Prince
 (SIGNATURE)

COMPANY: DAMES & MOORE

DATE: 7/8/97
 TIME: 4:35p

RECEIVED BY: Brenda Gregory
 (NAME)
Brenda Gregory
 (SIGNATURE)

COMPANY: Kemron

DATE: 7/8/97
 TIME: 10:35

forms/RECORD

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

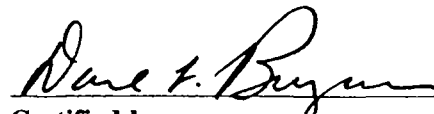
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Date Received: 07/08/97
Date Completed: 07/11/97
Date Reported: 07/11/97 16:19
Work ID: ORMET/07983-036-120

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-63	02	SS-64

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

Order # 97-07-172
July 11, 1997 16:19

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

Page 2

*This is to certify that the following samples were analyzed using good
laboratory practices to show the following results.*

SAMPLE ID: 01 SS-63 Collected: 07/08/97 1400 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	93	1	% wt.	07/09/97 CLH	D2216-90

SAMPLE ID: 02 SS-64 Collected: 07/08/97 1415 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	93	1	% wt.	07/09/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-07-172
July 11, 1997 16:20

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: **827-PAH-ORMET**
Sample Description: **SS-63**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **01**

Collected: **07/08/97 1400**
Category: **Soil**
Method: **8270\3550**

Analyst: **MDC** Extracted: **07/09/97** File: **OR3611**
Instrument: **HPMS5** Injected: **07/10/97** Factor: **1** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	1200	180
205-99-2	Benzo (b) fluoranthene	1500	180
207-08-9	Benzo (k) fluoranthene	1400	180
191-24-2	Benzo (g, h, i) perylene	720	180
50-32-8	Benzo (a) pyrene	1400	180
218-01-9	Chrysene	1400	180
53-70-3	Dibenzo (a, h) anthracene	290	180
193-39-5	Indeno (1, 2, 3-cd) pyrene	720	180

SURROGATES:

Nitrobenzene-d5	<u>32.3</u>	% Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>66.3</u>	% Recovery	(30% - 115%)
p-Terphenyl-d14	<u>77.8</u>	% Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

Order # 97-07-172
July 11, 1997 16:20

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: 827-PAH-ORMET
Sample Description: SS-64
Test Description: Polyaromatic Hydrocarbons

Lab No: 02

Collected: 07/08/97 1415
Category: Soil
Method: 8270\3550

Analyst: MDC Extracted: 07/09/97 File: OR3612
Instrument: HPMS5 Injected: 07/10/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	390	180
205-99-2	Benzo (b) fluoranthene	450	180
207-08-9	Benzo (k) fluoranthene	390	180
191-24-2	Benzo (g, h, i) perylene	220	180
50-32-8	Benzo (a) pyrene	410	180
218-01-9	Chrysene	440	180
53-70-3	Dibenzo (a, h) anthracene	ND	180
193-39-5	Indeno (1, 2, 3-cd) pyrene	220	180

SURROGATES:

Nitrobenzene-d5	<u>37.2</u> % Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>46.2</u> % Recovery	(30% - 115%)
p-Terphenyl-d14	<u>182*</u> % Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:



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CHAIN-OF-CUSTODY RECORD

forms/RECORD

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

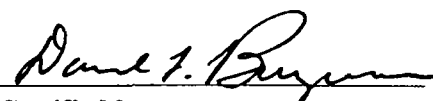
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Date Received: 07/09/97
Date Completed: 07/11/97
Date Reported: 07/11/97 16:12
Work ID: ORMET/HANNIBAL, OH

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-54	02	SS-51
03	SS-65	04	SS-56
05	SS-50	06	EW-13

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David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-54 Collected: 07/09/97 1715 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	77	1	% wt.	07/10/97 CLH	D2216-90

SAMPLE ID: 02 SS-51 Collected: 07/09/97 1630 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	84	1	% wt.	07/10/97 CLH	D2216-90

SAMPLE ID: 03 SS-65 Collected: 07/09/97 1500 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	92	1	% wt.	07/10/97 CLH	D2216-90

SAMPLE ID: 04 SS-56 Collected: 07/09/97 1730 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	84	1	% wt.	07/10/97 CLH	D2216-90

SAMPLE ID: 05 SS-50 Collected: 07/09/97 1645 Category: Soil

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	82	1	% wt.	07/10/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-07-218
July 11, 1997 16:12

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 3

Test Code: 808-PCB-S
Sample Description: SS-54
Test Description: PCB's (Soil)

Lab No: 01

Collected: 07/09/97 1715
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 07/10/97 File: 016R0101
Instrument: HP10 Injected: 07/11/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	21
11104-28-2	Aroclor-1221	ND	21
11141-16-5	Aroclor-1232	ND	21
53469-21-9	Aroclor-1242	ND	21
12672-29-6	Aroclor-1248	160	21
11097-69-1	Aroclor-1254	ND	43
11096-82-5	Aroclor-1260	ND	43

SURROGATES:

Decachlorobiphenyl	49.6	% Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	44.3	% Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-218
July 11, 1997 16:12

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 4

Test Code: **808-PCB-S**
Sample Description: **SS-51**
Test Description: **PCB's (Soil)**

Lab No: **02**

Collected: **07/09/97 1630**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS** Extracted: **07/10/97** File: **017R0101**
Instrument: **HP10** Injected: **07/11/97** Factor: **33** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	20
11104-28-2	Aroclor-1221	ND	20
11141-16-5	Aroclor-1232	ND	20
53469-21-9	Aroclor-1242	ND	20
12672-29-6	Aroclor-1248	56	20
11097-69-1	Aroclor-1254	ND	39
11096-82-5	Aroclor-1260	ND	39

SURROGATES:

Decachlorobiphenyl	52.7 % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	42 % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-218
July 11, 1997 16:12

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 5

Test Code: **808-PCB-S**
Sample Description: **SS-65**
Test Description: **PCB's (Soil)**

Lab No: **03**

Collected: **07/09/97 1500**
Category: **Soil**
Method: **8081\3550**

Analyst: **MLS**
Instrument: **HP10**

Extracted: **07/10/97**
Injected: **07/11/97**

File: **032R0101**
Factor: **33**

Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	18
11104-28-2	Aroclor-1221	ND	18
11141-16-5	Aroclor-1232	ND	18
53469-21-9	Aroclor-1242	ND	18
12672-29-6	Aroclor-1248	ND	18
11097-69-1	Aroclor-1254	ND	36
11096-82-5	Aroclor-1260	ND	36

SURROGATES:

Decachlorobiphenyl	<u>63.5</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>55.8</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-218
July 11, 1997 16:12

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 6

Test Code: 808-PCB-S
Sample Description: SS-56
Test Description: PCB's (Soil)

Lab No: 04

Collected: 07/09/97 1730
Category: Soil
Method: 8081\3550

Analyst: MLS Extracted: 07/10/97 File: 018R0101
Instrument: HP10 Injected: 07/11/97 Factor: 33 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	20
11104-28-2	Aroclor-1221	ND	20
11141-16-5	Aroclor-1232	ND	20
53469-21-9	Aroclor-1242	ND	20
12672-29-6	Aroclor-1248	51	20
11097-69-1	Aroclor-1254	ND	39
11096-82-5	Aroclor-1260	ND	39

SURROGATES:

Decachlorobiphenyl	<u>53.4</u> % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	<u>44.7</u> % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-218
July 11, 1997 16:12

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 7

Test Code: 808-PCB-S
Sample Description: SS-50
Test Description: PCB's (Soil)

Lab No: 05

Collected: 07/09/97 1645
Category: Soil
Method: 8081\3550

Analyst: MLS
Instrument: HP10

Extracted: 07/10/97
Injected: 07/11/97

File: 019R0101
Factor: 33

Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	20
11104-28-2	Aroclor-1221	ND	20
11141-16-5	Aroclor-1232	ND	20
53469-21-9	Aroclor-1242	ND	20
12672-29-6	Aroclor-1248	95	20
11097-69-1	Aroclor-1254	ND	40
11096-82-5	Aroclor-1260	ND	40

SURROGATES:

Decachlorobiphenyl	60 % Recovery (30% - 173%)
2,4,5,6-Tetrachloro-m-xylene	46.5 % Recovery (29% - 133%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit

Order # 97-07-218
July 11, 1997 16:12

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Page 8

Test Code: 808-PCB-W
Sample Description: EW-13
Test Description: PCB's (Water)

Lab No: 06

Collected: 07/09/97 1745
Category: Water
Method: 8081\3510

Analyst: MLS Extracted: 07/10/97 File: 030R0101
Instrument: HP10 Injected: 07/11/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
12674-11-2	Aroclor-1016	ND	0.5
11104-28-2	Aroclor-1221	ND	0.5
11141-16-5	Aroclor-1232	ND	0.5
53469-21-9	Aroclor-1242	ND	0.5
12672-29-6	Aroclor-1248	ND	0.5
11097-69-1	Aroclor-1254	ND	1
11096-82-5	Aroclor-1260	ND	1

SURROGATES:

Decachlorobiphenyl	39 % Recovery (25% - 140%)
2,4,5,6-Tetrachloro-m-xylene	42.2 % Recovery (13% - 154%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

ND = Not detected at or above the reporting limit



(513) 651-3440 Fax (513) 651-3452

CHAIN-OF-CUSTODY RECORD

forms/RECORD

(cooler Tense

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071



Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attn: John Reggi

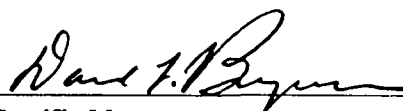
Login #: 97-07-219
Date Received: 07/09/97
Date Completed: 07/15/97
Date Reported: 07/15/97 11:20
Work ID: ORMET/HANNIBAL, OHIO

Client Code: ORMET-086

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	SS-54	02	SS-51
03	SS-65	04	SS-56
05	SS-50		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.


Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 SS-54 Collected: **07/09/97 1715** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	77	1	% wt.	07/10/97 CLH	D2216-90

SAMPLE ID: 02 SS-51 Collected: **07/09/97 1630** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	84	1	% wt.	07/10/97 CLH	D2216-90

SAMPLE ID: 03 SS-65 Collected: **07/09/97 1500** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	92	1	% wt.	07/10/97 CLH	D2216-90

SAMPLE ID: 04 SS-56 Collected: **07/09/97 1730** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	84	1	% wt.	07/10/97 CLH	D2216-90

SAMPLE ID: 05 SS-50 Collected: **07/09/97 1645** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED BY	METHOD
Percent Solids	82	1	% wt.	07/10/97 CLH	D2216-90

NOTES AND DEFINITIONS:

Order # 97-07-219
July 15, 1997 13:19

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

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Test Code: **827-PAH-ORMET**
Sample Description: **SS-65**
Test Description: **Polyaromatic Hydrocarbons**

Lab No: **03**

Collected: **07/09/97 1500**
Category: **Soil**
Method: **8270\3550**

Analyst: **JLI** Extracted: **07/10/97** File: **RU735**
Instrument: **HPMS7** Injected: **07/11/97** Factor: **1** Units: **ug/kg**

CAS#	COMPOUND	RESULT	REPORTING LIMIT
56-55-3	Benzo (a) anthracene	1200	180
205-99-2	Benzo (b) fluoranthene	1300	180
207-08-9	Benzo (k) fluoranthene	1100	180
191-24-2	Benzo (g, h, i) perylene	800	180
50-32-8	Benzo (a) pyrene	1300	180
218-01-9	Chrysene	1300	180
53-70-3	Dibenzo (a, h) anthracene	330	180
193-39-5	Indeno (1, 2, 3-cd) pyrene	800	180

SURROGATES:

Nitrobenzene-d5	<u>41.4</u> % Recovery	(23% - 120%)
2-Fluorobiphenyl	<u>46.9</u> % Recovery	(30% - 115%)
p-Terphenyl-d14	<u>66</u> % Recovery	(18% - 137%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:



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CHAIN-OF-CUSTODY RECORD

forms/RECORD

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (614) 373-4071

Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attention: John Reggi

PO Number:
Account Number: ORMET-086

Login #: L9707389
Report Date: 07/23/97
Work ID: ORMET PRIMARY/HANNIBAL, OH
Date Received: 07/17/97

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
L9707389-01	SS-120	L9707389-02	SS-156
L9707389-03	SS-151	L9707389-04	SS-154
L9707389-05	DUPLICATE 4	L9707389-06	SS-127
L9707389-07	SS-131	L9707389-08	SS-159
L9707389-09	SS-140	L9707389-10	SS-133
L9707389-11	SS-130	L9707389-12	SS-139
L9707389-13	SS-134	L9707389-14	SS-128
L9707389-15	SS-129	L9707389-16	SS-143
L9707389-17	SS-138	L9707389-18	SS-123
L9707389-19	SS-126	L9707389-20	SS-132
L9707389-21	SS-150	L9707389-22	SS-148
L9707389-23	SS-147	L9707389-24	SS-136
L9707389-25	SS-122	L9707389-26	SS-162
L9707389-27	SS-137	L9707389-28	SS-135
L9707389-29	SS-125	L9707389-30	DUPLICATE 1
L9707389-31	DUPLICATE 2	L9707389-32	DUPLICATE 3

All results on solids/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. The report shall not be reproduced, except in full, without the written approval of KEMRON.


Certified By
David L. Bumgarner

Login #L9707389
July 23, 1997 03:47 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-01
Client Sample ID: SS-120
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1640

% Solid: 87
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	87		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-01
Client Sample ID: SS-120
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS4
Analyst: JLI
Lab File ID: OR9011

Method: 8270\3550
Run ID: R28868

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	510		170	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	530		170	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	410		170	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	350		170	1
50-32-8	Benzo(a)pyrene.....	ug/kg	520		170	1
218-01-9	Chrysene.....	ug/kg	560		170	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	170	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	340		170	1

SURROGATES- In Percent Recovery:

Nitrobenzene-d5.....	50.6	(23 - 120%)
2-Fluorobiphenyl.....	57.6	(30 - 115%)
p-Terphenyl-d14.....	80.9	(18 - 137%)

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July 23, 1997 03:47 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-02
Client Sample ID: SS-156
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1730

% Solid: 84
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	84		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-02
Client Sample ID: SS-156
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS4
Analyst: JLI
Lab File ID: OR9012

Method: 8270\3550
Run ID: R28868

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	2800		170	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	3000		170	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	2400		170	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	2400		170	1
50-32-8	Benzo(a)pyrene.....	ug/kg	3400		170	1
218-01-9	Chrysene.....	ug/kg	3000		170	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg	1300		170	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	3200		170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	69.7	(23 - 120%)			
	2-Fluorobiphenyl.....	81.9	(30 - 115%)			
	p-Terphenyl-d14.....	95.3	(18 - 137%)			

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July 23, 1997 03:47 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-03
Client Sample ID: SS-151
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1720

% Solid: 82
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	82		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-03
Client Sample ID: SS-151
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS4
Analyst: JLI
Lab File ID: OR9013

Method: 8270\3550
Run ID: R28868

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo (a) anthracene.....	ug/kg		ND	170	1
205-99-2	Benzo (b) fluoranthene.....	ug/kg	180		170	1
207-08-9	Benzo (k) fluoranthene.....	ug/kg		ND	170	1
191-24-2	Benzo (g,h,i) perylene.....	ug/kg		ND	170	1
50-32-8	Benzo (a) pyrene.....	ug/kg	180		170	1
218-01-9	Chrysene.....	ug/kg	170		170	1
53-70-3	Dibenzo (a,h) anthracene.....	ug/kg		ND	170	1
193-39-5	Indeno (1,2,3-cd) pyrene.....	ug/kg		ND	170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	62.6		(23 - 120%)		
	2-Fluorobiphenyl.....	68.9		(30 - 115%)		
	p-Terphenyl-d14.....	91.6		(18 - 137%)		

Login #L9707389
July 23, 1997 03:47 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-04
Client Sample ID: SS-154
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1725

% Solid: 84
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	84		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-04
Client Sample ID: SS-154
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS4
Analyst: JLI
Lab File ID: OR9014

Method: 8270\3550
Run ID: R28868

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	320		170	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	330		170	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	330		170	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	320		170	1
50-32-8	Benzo(a)pyrene.....	ug/kg	370		170	1
218-01-9	Chrysene.....	ug/kg	360		170	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	170	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	290		170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	65.4	(23 - 120%)			
	2-Fluorobiphenyl.....	72.5	(30 - 115%)			
	p-Terphenyl-d14.....	85.4	(18 - 137%)			

Login #L9707389
July 23, 1997 03:47 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-05
Client Sample ID: DUPLICATE 4
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1730

% Solid: 88
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	88		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-05
Client Sample ID: DUPLICATE 4
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS4
Analyst: JLI
Lab File ID: OR9015

Method: 8270\3550
Run ID: R28868

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	2100		170	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	2100		170	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	2000		170	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	2500		170	1
50-32-8	Benzo(a)pyrene.....	ug/kg	2600		170	1
218-01-9	Chrysene.....	ug/kg	2300		170	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg	930		170	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	2400		170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	63.3	{ 23 - 120%}			
	2-Fluorobiphenyl.....	73.7	{ 30 - 115%}			
	p-Terphenyl-d14.....	85.7	{ 18 - 137%}			

Login #L9707389
July 23, 1997 03:47 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-06
Client Sample ID: SS-127
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1530

% Solid: 85
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	85		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-06
Client Sample ID: SS-127
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS4
Analyst: JLI
Lab File ID: OR9016

Method: 8270\3550
Run ID: R28868

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	320		170	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	280		170	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	300		170	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	250		170	1
50-32-8	Benzo(a)pyrene.....	ug/kg	320		170	1
218-01-9	Chrysene.....	ug/kg	350		170	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	170	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	240		170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	67.6	(23 - 120%)			
	2-Fluorobiphenyl.....	75.3	(30 - 115%)			
	p-Terphenyl-d14.....	89.3	(18 - 137%)			

Login #L9707389
July 23, 1997 03:47 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-07
Client Sample ID: SS-131
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1445

% Solid: 90
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	90		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 05:15 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-07
Client Sample ID: SS-131
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 90

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS4
Analyst: JLI
Lab File ID: OR9019

Method: 8270\3550
Run ID: R28868

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	370		190	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	380		190	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	270		190	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	240		190	1
50-32-8	Benzo(a)pyrene.....	ug/kg	320		190	1
218-01-9	Chrysene.....	ug/kg	400		190	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	190	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	240		190	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	67.7	(23 - 120%)			
	2-Fluorobiphenyl.....	77.3	(30 - 115%)			
	p-Terphenyl-d14.....	80.9	(18 - 137%)			

Login #L9707389
July 23, 1997 03:47 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-08
Client Sample ID: SS-159
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1705

% Solid: 92
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	92		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-08
Client Sample ID: SS-159
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 07/17/97

% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS4
Analyst: JLI
Lab File ID: OR9020

Method: 8270\3550
Run ID: R28868

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	190		170	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	220		170	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg		ND	170	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg		ND	170	1
50-32-8	Benzo(a)pyrene.....	ug/kg	190		170	1
218-01-9	Chrysene.....	ug/kg	250		170	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	170	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg		ND	170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	64.0	(23 - 120%)			
	2-Fluorobiphenyl.....	70.1	(30 - 115%)			
	p-Terphenyl-d14.....	83.4	(18 - 137%)			

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-09
Client Sample ID: SS-140
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1750

% Solid: 91
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYP
Percent Solids.....	% wt.	91		1.0	MAR	07/22/97	D2216-90	N/

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-09	Dil. Type: N/A	Sample Weight: N/A
Client Sample ID: SS-140	COC Info: N/A	Extract Volume: N/A
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH	Date Collected: 07/17/97	% Solid: N/A
Matrix: Soil	Instrument: HPMS4	Method: 8270\3550
TCLP Extract Date: N/A	Analyst: JLI	Run ID: R28868
Extract Date: 07/18/97	Lab File ID: OR9021	
Analysis Date: 07/21/97		

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	760		170	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	750		170	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	640		170	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	580		170	1
50-32-8	Benzo(a)pyrene.....	ug/kg	770		170	1
218-01-9	Chrysene.....	ug/kg	840		170	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg	200		170	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	560		170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	51.0	(23 - 120%)			
	2-Fluorobiphenyl.....	59.8	(30 - 115%)			
	p-Terphenyl-d14.....	64.9	(18 - 137%)			

Login 9707389
July 23, 1997 03:47 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-10
Client Sample ID: SS-133
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1355

% Solid: 86
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	I
Percent Solids.....	% wt.	86		1.0	MAR	07/22/97	D2216-90	2

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KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-10	Dil. Type: N/A	Sample Weight: N/A
Client Sample ID: SS-133	COC Info: N/A	Extract Volume: N/A
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH	Date Collected: 07/17/97	% Solid: N/A
Matrix: Soil	Instrument: HPMS4	Method: 8270\3550
TCLP Extract Date: N/A	Analyst: JLI	Run ID: R28868
Extract Date: 07/18/97	Lab File ID: OR9022	
Analysis Date: 07/21/97		

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg		ND	170	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg		ND	170	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg		ND	170	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg		ND	170	1
50-32-8	Benzo(a)pyrene.....	ug/kg		ND	170	1
218-01-9	Chrysene.....	ug/kg	180		170	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	170	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg		ND	170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	59.7	(23 - 120%)			
	2-Fluorobiphenyl.....	68.3	(30 - 115%)			
	p-Terphenyl-d14.....	93.6	(18 - 137%)			

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-11
Client Sample ID: SS-130
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 945

% Solid: 83
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	83		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-11
Client Sample ID: SS-130
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 07/17/97

% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/22/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR883

Method: 8270\3550
Run ID: R28870

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	290		170	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	330		170	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	300		170	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	190		170	1
50-32-8	Benzo(a)pyrene.....	ug/kg		ND	170	1
218-01-9	Chrysene.....	ug/kg	310		170	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	170	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	190		170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	65.7	(23 - 120%)			
	2-Fluorobiphenyl.....	69.5	(30 - 115%)			
	p-Terphenyl-d14.....	85.1	(18 - 137%)			

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-12
Client Sample ID: SS-139
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1655

% Solid: 88
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DI TYP
Percent Solids.....	% wt.	88		1.0	MAR	07/22/97	D2216-90	N/

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-12
Client Sample ID: SS-139
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/22/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR884

Method: 8270\3550
Run ID: R28870

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo (a) anthracene.....	ug/kg		ND	170	1
205-99-2	Benzo (b) fluoranthene.....	ug/kg		ND	170	1
207-08-9	Benzo (k) fluoranthene.....	ug/kg		ND	170	1
191-24-2	Benzo (g, h, i) perylene.....	ug/kg		ND	170	1
50-32-8	Benzo (a) pyrene.....	ug/kg		ND	170	1
218-01-9	Chrysene.....	ug/kg		ND	170	1
53-70-3	Dibenzo (a, h) anthracene.....	ug/kg		ND	170	1
193-39-5	Indeno (1, 2, 3-cd) pyrene.....	ug/kg		ND	170	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	48.9		(23 - 120%)		
	2-Fluorobiphenyl.....	53.9		(30 - 115%)		
	p-Terphenyl-d14.....	82.1		(18 - 137%)		

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-14
Client Sample ID: SS-128
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1145

% Solid: 88
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	88		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-14
Client Sample ID: SS-128
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 88

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR874

Method: 8270\3550
Run ID: R28894

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo (a) anthracene.....	ug/kg	220		190	1
205-99-2	Benzo (b) fluoranthene.....	ug/kg	270		190	1
207-08-9	Benzo (k) fluoranthene.....	ug/kg	220		190	1
191-24-2	Benzo (g, h, i) perylene.....	ug/kg		ND	190	1
50-32-8	Benzo (a) pyrene.....	ug/kg	230		190	1
218-01-9	Chrysene.....	ug/kg	260		190	1
53-70-3	Dibenzo (a, h) anthracene.....	ug/kg		ND	190	1
193-39-5	Indeno (1, 2, 3-cd) pyrene.....	ug/kg		ND	190	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	67.1	(23 - 120%)			
	2-Fluorobiphenyl.....	72.5	(30 - 115%)			
	p-Terphenyl-d14.....	81.2	(18 - 137%)			

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-15
Client Sample ID: SS-129
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1000

% Solid: 87
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	87		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 03:16 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-15
Client Sample ID: SS-129
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 07/17/97

% Solid: 87

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/21/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR875

Method: 8270\3550
Run ID: R28894

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	370		200	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	410		200	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	330		200	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	240		200	1
50-32-8	Benzo(a)pyrene.....	ug/kg	380		200	1
218-01-9	Chrysene.....	ug/kg	430		200	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	200	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	240		200	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	59.1	(23 - 120%)			
	2-Fluorobiphenyl.....	64.5	(30 - 115%)			
	p-Terphenyl-d14.....	77.7	(18 - 137%)			

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-16
Client Sample ID: SS-143
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 07/17/97

% Solid: 92

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/21/97

Instrument: HP10
Analyst: MLS
Lab File ID: 007F0101

Method: 8081\3550
Run ID: R28866

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND	0.54	1
11104-28-2	Aroclor-1221.....	ug/kg		ND	0.54	1
11141-16-5	Aroclor-1232.....	ug/kg		ND	0.54	1
53469-21-9	Aroclor-1242.....	ug/kg		ND	0.54	1
12672-29-6	Aroclor-1248.....	ug/kg		ND	0.54	1
11097-69-1	Aroclor-1254.....	ug/kg		ND	1.1	1
11096-82-5	Aroclor-1260.....	ug/kg		ND	1.1	1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	75.2	(30 - 173%)			
	2,4,5,6-Tetrachloro-m-xylene.....	67.7	(29 - 133%)			

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-16
Client Sample ID: SS-143
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1620

% Solid: 92
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	92		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-16
Client Sample ID: SS-143
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 07/17/97

% Solid: 92

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/22/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR878

Method: 8270\3550
Run ID: R28870

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	270		180	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	320		180	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	270		180	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	180		180	1
50-32-8	Benzo(a)pyrene.....	ug/kg		ND	180	1
218-01-9	Chrysene.....	ug/kg	300		180	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	180	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	180		180	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	63.3	(23 - 120%)			
	2-Fluorobiphenyl.....	69.0	(30 - 115%)			
	p-Terphenyl-d14.....	81.1	(18 - 137%)			

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-17
Client Sample ID: SS-138
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 93

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/21/97

Instrument: HP10
Analyst: MLS
Lab File ID: 008F0101

Method: 8081\3550
Run ID: R28866

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND	0.54	1
11104-28-2	Aroclor-1221.....	ug/kg		ND	0.54	1
11141-16-5	Aroclor-1232.....	ug/kg		ND	0.54	1
53469-21-9	Aroclor-1242.....	ug/kg		ND	0.54	1
12672-29-6	Aroclor-1248.....	ug/kg	25		0.54	1
11097-69-1	Aroclor-1254.....	ug/kg		ND	1.1	1
11096-82-5	Aroclor-1260.....	ug/kg		ND	1.1	1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	78.0		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	67.9		(29 - 133%)		

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-17
Client Sample ID: SS-138
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1640

% Solid: 93
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	93		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-17
Client Sample ID: SS-138
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 07/17/97

% Solid: 93

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/22/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR879

Method: 8270\3550
Run ID: R28870

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	260		180	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	280		180	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg		ND	180	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg		ND	180	1
50-32-8	Benzo(a)pyrene.....	ug/kg		ND	180	1
218-01-9	Chrysene.....	ug/kg	310		180	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	180	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg		ND	180	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	77.7	(23 - 120%)			
	2-Fluorobiphenyl.....	81.7	(30 - 115%)			
	p-Terphenyl-d14.....	90.5	(18 - 137%)			

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-18
Client Sample ID: SS-123
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 84

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/21/97

Instrument: HP10
Analyst: MLS
Lab File ID: 009F0101

Method: 8081\3550
Run ID: R28866

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND		0.60 1
11104-28-2	Aroclor-1221.....	ug/kg		ND		0.60 1
11141-16-5	Aroclor-1232.....	ug/kg		ND		0.60 1
53469-21-9	Aroclor-1242.....	ug/kg		ND		0.60 1
12672-29-6	Aroclor-1248.....	ug/kg	190			0.60 1
11097-69-1	Aroclor-1254.....	ug/kg		ND		1.2 1
11096-82-5	Aroclor-1260.....	ug/kg		ND		1.2 1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	89.0		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	78.5		(29 - 133%)		

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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-18
Client Sample ID: SS-123
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1045

% Solid: 84
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	84		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-18
Client Sample ID: SS-123
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 84

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/22/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR880

Method: 8270\3550
Run ID: R28870

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	690		200	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	920		200	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	760		200	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	560		200	1
50-32-8	Benzo(a)pyrene.....	ug/kg	790		200	1
218-01-9	Chrysene.....	ug/kg	890		200	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg	210		200	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	560		200	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	67.8	(23 - 120%)			
	2-Fluorobiphenyl.....	71.6	(30 - 115%)			
	p-Terphenyl-d14.....	88.1	(18 - 137%)			

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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-19
Client Sample ID: SS-126
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1135

% Solid: 85
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	85		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-19
Client Sample ID: SS-126
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 85

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/22/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR881

Method: 8270\3550
Run ID: R28870

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg		ND	200	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	220		200	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg		ND	200	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg		ND	200	1
50-32-8	Benzo(a)pyrene.....	ug/kg		ND	200	1
218-01-9	Chrysene.....	ug/kg	210		200	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	200	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg		ND	200	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	67.0	(23 - 120%)			
	2-Fluorobiphenyl.....	70.0	(30 - 115%)			
	p-Terphenyl-d14.....	82.6	(18 - 137%)			

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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-20
Client Sample ID: SS-132
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1615

% Solid: 88
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	88		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-20
Client Sample ID: SS-132
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 88

TCLP Extract Date: N/A
Extract Date: 07/18/97
Analysis Date: 07/22/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR882

Method: 8270\3550
Run ID: R28870

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	390		190	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	600		190	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	340		190	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	270		190	1
50-32-8	Benzo(a)pyrene.....	ug/kg		ND	190	1
218-01-9	Chrysene.....	ug/kg	510		190	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	190	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	280		190	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	64.1	(23 - 120%)			
	2-Fluorobiphenyl.....	68.8	(30 - 115%)			
	p-Terphenyl-d14.....	79.1	(18 - 137%)			

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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-21
Client Sample ID: SS-150
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1735

% Solid: 83
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	83		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-21
Client Sample ID: SS-150
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 83

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/21/97

Instrument: HPMS5
Analyst: MDC
Lab File ID: OR3725

Method: 8270\3550
Run ID: R28871

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	1200		200	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	1100		200	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	1000		200	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	710		200	1
50-32-8	Benzo(a)pyrene.....	ug/kg	1100		200	1
218-01-9	Chrysene.....	ug/kg	1200		200	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	200	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	700		200	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	47.8	(23 - 120%)			
	2-Fluorobiphenyl.....	50.9	(30 - 115%)			
	p-Terphenyl-d14.....	75.0	(18 - 137%)			

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-22
Client Sample ID: SS-148
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 92

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/21/97

Instrument: HP10
Analyst: MLS
Lab File ID: 010F0101

Method: 8081\3550
Run ID: R28866

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg	110	ND	0.54	1
11104-28-2	Aroclor-1221.....	ug/kg		ND	0.54	1
11141-16-5	Aroclor-1232.....	ug/kg		ND	0.54	1
53469-21-9	Aroclor-1242.....	ug/kg		ND	0.54	1
12672-29-6	Aroclor-1248.....	ug/kg		ND	0.54	1
11097-69-1	Aroclor-1254.....	ug/kg		ND	1.1	1
11096-82-5	Aroclor-1260.....	ug/kg		ND	1.1	1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	82.7		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	74.0		(29 - 133%)		

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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-22
Client Sample ID: SS-148
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1330

% Solid: 92
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	92		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-23
Client Sample ID: SS-147
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 91

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/21/97

Instrument: HP10
Analyst: MLS
Lab File ID: 013F0101

Method: 8081\3550
Run ID: R28866

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg	130	ND		0.55 1
11104-28-2	Aroclor-1221.....	ug/kg		ND		0.55 1
11141-16-5	Aroclor-1232.....	ug/kg		ND		0.55 1
53469-21-9	Aroclor-1242.....	ug/kg		ND		0.55 1
12672-29-6	Aroclor-1248.....	ug/kg				0.55 1
11097-69-1	Aroclor-1254.....	ug/kg		ND		1.1 1
11096-82-5	Aroclor-1260.....	ug/kg		ND		1.1 1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	68.7		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	65.8		(29 - 133%)		

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-23
Client Sample ID: SS-147
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1400

% Solid: 91
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	91		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-24
Client Sample ID: SS-136
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 87

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/21/97

Instrument: HP10
Analyst: MLS
Lab File ID: 014F0101

Method: 8081\3550
Run ID: R28866

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg	100	ND		0.57 1
11104-28-2	Aroclor-1221.....	ug/kg		ND		0.57 1
11141-16-5	Aroclor-1232.....	ug/kg		ND		0.57 1
53469-21-9	Aroclor-1242.....	ug/kg		ND		0.57 1
12672-29-6	Aroclor-1248.....	ug/kg				0.57 1
11097-69-1	Aroclor-1254.....	ug/kg		ND		1.1 1
11096-82-5	Aroclor-1260.....	ug/kg		ND		1.1 1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	63.2		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	63.9		(29 - 133%)		

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-24
Client Sample ID: SS-136
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1345

% Solid: 87
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	87		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707
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KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-25
Client Sample ID: SS-122
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 94

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/22/97

Instrument: HP10
Analyst: MLS
Lab File ID: 017F0101
Method: 8081\3550
Run ID: R28867

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg	38	ND	0.53	1
11104-28-2	Aroclor-1221.....	ug/kg		ND	0.53	1
11141-16-5	Aroclor-1232.....	ug/kg		ND	0.53	1
53469-21-9	Aroclor-1242.....	ug/kg		ND	0.53	1
12672-29-6	Aroclor-1248.....	ug/kg		ND	0.53	1
11097-69-1	Aroclor-1254.....	ug/kg		ND	1.1	1
11096-82-5	Aroclor-1260.....	ug/kg		ND	1.1	1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	76.1		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	76.3		(29 - 133%)		

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-25
Client Sample ID: SS-122
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1615
% Solid: 94
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	94		1.0	MAR	07/22/97	D2216-90	N/A

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-25
Client Sample ID: SS-122
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 94

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/21/97

Instrument: HPMS5
Analyst: MDC
Lab File ID: OR3726

Method: 8270\3550
Run ID: R28871

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/kg	470		180	1
205-99-2	Benzo(b)fluoranthene.....	ug/kg	550		180	1
207-08-9	Benzo(k)fluoranthene.....	ug/kg	460		180	1
191-24-2	Benzo(g,h,i)perylene.....	ug/kg	310		180	1
50-32-8	Benzo(a)pyrene.....	ug/kg	520		180	1
218-01-9	Chrysene.....	ug/kg	550		180	1
53-70-3	Dibenzo(a,h)anthracene.....	ug/kg		ND	180	1
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/kg	310		180	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	39.8	(23 - 120%)			
	2-Fluorobiphenyl.....	44.6	(30 - 115%)			
	p-Terphenyl-d14.....	75.0	(18 - 137%)			

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-26
Client Sample ID: SS-162
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 94

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/22/97

Instrument: HP10
Analyst: MLS
Lab File ID: 018F0101

Method: 8081\3550
Run ID: R28867

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg	21	ND		0.53 1
11104-28-2	Aroclor-1221.....	ug/kg		ND		0.53 1
11141-16-5	Aroclor-1232.....	ug/kg		ND		0.53 1
53469-21-9	Aroclor-1242.....	ug/kg		ND		0.53 1
12672-29-6	Aroclor-1248.....	ug/kg				0.53 1
11097-69-1	Aroclor-1254.....	ug/kg		ND		1.1 1
11096-82-5	Aroclor-1260.....	ug/kg		ND		1.1 1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	88.8		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	79.6		(29 - 133%)		

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-26
Client Sample ID: SS-162
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1245

% Solid: 94
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	94		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-27
Client Sample ID: SS-137
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil
TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/22/97

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97
Instrument: HP10
Analyst: MLS
Lab File ID: 019F0101

Sample Weight: N/A
Extract Volume: N/A

% Solid: 91

Method: 8081\3550
Run ID: R28867

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND		0.55 1
11104-28-2	Aroclor-1221.....	ug/kg		ND		0.55 1
11141-16-5	Aroclor-1232.....	ug/kg		ND		0.55 1
53469-21-9	Aroclor-1242.....	ug/kg		ND		0.55 1
12672-29-6	Aroclor-1248.....	ug/kg	96			0.55 1
11097-69-1	Aroclor-1254.....	ug/kg		ND		1.1 1
11096-82-5	Aroclor-1260.....	ug/kg		ND		1.1 1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	70.2		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	66.3		(29 - 133%)		

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-27
Client Sample ID: SS-137
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1610

% Solid: 91
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	91		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
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KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-28
Client Sample ID: SS-135
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 87

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/22/97

Instrument: HP10
Analyst: MLS
Lab File ID: 020F0101

Method: 8081\3550
Run ID: R28867

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND		0.57 1
11104-28-2	Aroclor-1221.....	ug/kg		ND		0.57 1
11141-16-5	Aroclor-1232.....	ug/kg		ND		0.57 1
53469-21-9	Aroclor-1242.....	ug/kg		ND		0.57 1
12672-29-6	Aroclor-1248.....	ug/kg	280			0.57 1
11097-69-1	Aroclor-1254.....	ug/kg		ND		1.1 1
11096-82-5	Aroclor-1260.....	ug/kg		ND		1.1 1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	81.2		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	74.9		(29 - 133%)		

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-28
Client Sample ID: SS-135
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 950

% Solid: 87
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	87		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-29
Client Sample ID: SS-125
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 94

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/22/97

Instrument: HP10
Analyst: MLS
Lab File ID: 021F0101

Method: 8081\3550
Run ID: R28867

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND		0.53 1
11104-28-2	Aroclor-1221.....	ug/kg		ND		0.53 1
11141-16-5	Aroclor-1232.....	ug/kg		ND		0.53 1
53469-21-9	Aroclor-1242.....	ug/kg		ND		0.53 1
12672-29-6	Aroclor-1248.....	ug/kg	28			0.53 1
11097-69-1	Aroclor-1254.....	ug/kg		ND		1.1 1
11096-82-5	Aroclor-1260.....	ug/kg		ND		1.1 1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	77.2		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	71.7		(29 - 133%)		

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-29
Client Sample ID: SS-125
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1230

% Solid: 94
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	94		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707389-29
Client Sample ID: SS-125
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 07/17/97

% Solid: 94

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/21/97

Instrument: HPMS5
Analyst: MDC
Lab File ID: OR3727

Method: 8270\3550
Run ID: R28871

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo (a) anthracene.....	ug/kg	240		180	1
205-99-2	Benzo (b) fluoranthene.....	ug/kg	300		180	1
207-08-9	Benzo (k) fluoranthene.....	ug/kg	270		180	1
191-24-2	Benzo (g, h, i) perylene.....	ug/kg		ND	180	1
50-32-8	Benzo (a) pyrene.....	ug/kg	270		180	1
218-01-9	Chrysene.....	ug/kg	310		180	1
53-70-3	Dibenzo (a, h) anthracene.....	ug/kg		ND	180	1
193-39-5	Indeno (1, 2, 3-cd) pyrene.....	ug/kg		ND	180	1
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	37.6	(23 - 120%)			
	2-Fluorobiphenyl.....	44.7	(30 - 115%)			
	p-Terphenyl-d14.....	73.5	(18 - 137%)			

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-30
Client Sample ID: DUPLICATE 1
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 90

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/22/97

Instrument: HP10
Analyst: MLS
Lab File ID: 022F0101

Method: 8081\3550
Run ID: R28867

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND	0.56	1
11104-28-2	Aroclor-1221.....	ug/kg		ND	0.56	1
11141-16-5	Aroclor-1232.....	ug/kg		ND	0.56	1
53469-21-9	Aroclor-1242.....	ug/kg		ND	0.56	1
12672-29-6	Aroclor-1248.....	ug/kg		ND	0.56	1
11097-69-1	Aroclor-1254.....	ug/kg		ND	1.1	1
11096-82-5	Aroclor-1260.....	ug/kg		ND	1.1	1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	68.0	(30 - 173%)			
	2,4,5,6-Tetrachloro-m-xylene.....	68.5	(29 - 133%)			

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-30
Client Sample ID: DUPLICATE 1
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1245

% Solid: 90
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	90		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-31
Client Sample ID: DUPLICATE 2
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: 89

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/22/97

Instrument: HP10
Analyst: MLS
Lab File ID: 023F0101

Method: 8081\3550
Run ID: R28867

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND		0.56 1
11104-28-2	Aroclor-1221.....	ug/kg		ND		0.56 1
11141-16-5	Aroclor-1232.....	ug/kg		ND		0.56 1
53469-21-9	Aroclor-1242.....	ug/kg		ND		0.56 1
12672-29-6	Aroclor-1248.....	ug/kg	330			0.56 1
11097-69-1	Aroclor-1254.....	ug/kg		ND		1.1 1
11096-82-5	Aroclor-1260.....	ug/kg		ND		1.1 1
SURROGATES- In Percent Recovery:						
	Decachlorobiphenyl.....	77.7		(30 - 173%)		
	2,4,5,6-Tetrachloro-m-xylene.....	70.2		(29 - 133%)		

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-31
Client Sample ID: DUPLICATE 2
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 950

% Solid: 89
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	89		1.0	MAR	07/22/97	D2216-90	N/A

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-S - PCB's (Soil)

Lab Sample ID: L9707389-32
Client Sample ID: DUPLICATE 3
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 90

TCLP Extract Date: N/A
Extract Date: 07/21/97
Analysis Date: 07/22/97

Instrument: HP10
Analyst: MLS
Lab File ID: 024F0101

Method: 8081\3550
Run ID: R28867

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/kg		ND	0.56	1
11104-28-2	Aroclor-1221.....	ug/kg		ND	0.56	1
11141-16-5	Aroclor-1232.....	ug/kg		ND	0.56	1
53469-21-9	Aroclor-1242.....	ug/kg		ND	0.56	1
12672-29-6	Aroclor-1248.....	ug/kg	96		0.56	1
11097-69-1	Aroclor-1254.....	ug/kg		ND	1.1	1
11096-82-5	Aroclor-1260.....	ug/kg		ND	1.1	1

SURROGATES- In Percent Recovery:

Decachlorobiphenyl.....	87.6	(30 - 173%)
2,4,5,6-Tetrachloro-m-xylene.....	82.1	(29 - 133%)

Login #L9707389
July 23, 1997 01:07 pm

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707389-32
Client Sample ID: DUPLICATE 3
Site/Work ID: ORMET PRIMARY/HANNIBAL, OH

Matrix: Soil
Collected: 07/17/97 1330

% Solid: 90
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	90		1.0	MAR	07/22/97	D2216-90	N/A



DAMES & MOORE

A DAMES & MOORE GROUP COMPANY

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Cincinnati, Ohio 45203

(513) 651-3440 Fax (513) 651-3452

Order @ 4°C

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. ORMET PRIMARY						NO. OF CONTAINERS	ANALYTICAL PARAMETERS								FORWARD RESULTS TO:
		LOCATION HANNIBAL, OHIO							PAH PCB								
SAMPLERS: RAY VASKE (NAME) (SIGNATURE)		LABORATORY: KEMRON															
		ADDRESS:															
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION								REMARKS:		
SS-126	7/17/97	11:35a	X		X		SS-126	1	X						NORMAL		
SS-132	7/17/97	4:15p	X		X		SS-132	1	X						RUSH		
SS-150		5:35p	X		X		SS-150	1	X								
SS-148		1:30p	X		X		SS-148	1		X							
SS-147		2:00p	X		X		SS-147	1		X							
SS-136		1:45p	X		X		SS-136	1		X							
SS-122		4:15p	X		X		SS-122	1	X	X					cool per [signature] 7/15/97		
SS-162		12:45p	X		X		SS-162	1		X							
SS-137		4:10p	X		X		SS-137	1		X							
SS-135		9:50a	X		X		SS-135	1		X							
SS-125		12:30p	X		X		SS-125	1	X	X							
DUPLICATE 1		12:45p	X		X		DUPLICATE 1	1		X							
DUPLICATE 2		9:50a	X		X		DUPLICATE 2	1	X								
DUPLICATE 2		9:50a	X		X		DUPLICATE 2	1		X					Sto stored in locker		
DUPLICATE 3		1:30p	X		X		DUPLICATE 3	1		X					Cooler overnight		

RELINQUISHED RAY VASKE

COMPANY:

DATE:

RECEIVED

DEBRA ELLIOTT

COMPANY:

DATE:

DATE:

644 Linn Street, Suite 501
Cincinnati, Ohio 45203
(513) 651-3440 Fax (513) 651-3452

Cooler @ 3°C

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. <u>ORMET PRIMARY</u>						NO. OF CONTAINERS	ANALYTICAL PARAMETERS PAH PCB							FORWARD RESULTS TO:		
		LOCATION <u>HANNIBAL, OHIO</u>																
SAMPLERS: <u>RAY VASKE</u> (NAME) <u>Ray Vaske</u> (SIGNATURE)		LABORATORY: <u>KEMRON</u> ADDRESS: _____																
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION										REMARKS:	
SS-127	7/17/97	3:30p	X		X		SS-127	1	X								RUSH	
SS-131	7/17/97	2:45p	X		X		SS-131	1	X									
SS-159	7/17/97	5:05p	X		X		SS-159	1	X									
SS-140		5:50p	X		X		SS-140	1	X									
SS-133		1:55p	X		X		SS-133	1	X									
SS-130		9:45a.	X		X		SS-130	1	X									
SS-139		4:55p	X		X		SS-139	1	X									
SS-134		4:00p	X		X		SS-134	1	X									
SS-128		11:45a	X		X		SS-128	1	X									
SS-129		10:0a.	X		X		SS-129	1	X									
DUPLICATE 4																		
SS-143		4:20p	X		X		SS-143	1	X	X								
SS-138		4:40p	X		X		SS-138	1	X	X							Sto stored in	
SS-123		10:45a.	X		X		SS-123		X	X	PAH						locked cooler	
over night (PAH)																		
RELINQUISHED BY: _____ (NAME) _____ (SIGNATURE)		COMPANY: <u>KEMRON</u>		DATE: <u>7/17/97</u> TIME: <u>4:30pm</u>		RECEIVED BY: <u>Debra Elliott</u> (NAME) <u>Debra R. Elliott</u> (SIGNATURE)		COMPANY: _____		DATE: _____ TIME: _____								
RELINQUISHED BY: <u>Ray Vaske</u> (NAME) <u>Ray Vaske</u> (SIGNATURE)		COMPANY: <u>DAMES & MOORE</u>		DATE: <u>7/17/97</u> TIME: <u>4:30p</u>		RECEIVED BY: <u>Brenda Gregory</u> (NAME) <u>Brenda Gregory</u> (SIGNATURE)		COMPANY: <u>Kemron</u>		DATE: <u>7/18/97</u> TIME: <u>800</u>								

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (614) 373-4071

Ormet Corporation
PO Box 176
Hannibal, OH 43931

Attention: John Reggi


PO Number:
Account Number: ORMET-086

Login #: L9707390
Report Date: 07/24/97
Work ID: ORMET PRIMARY/HANNIBAL, OHIO
Date Received: 07/17/97

SAMPLE IDENTIFICATION

<u>Sample Number</u>	<u>Sample Description</u>	<u>Sample Number</u>	<u>Sample Description</u>
L9707390-01	EW-14		

All results on solids/sludges are reported on a dry weight basis, where applicable,
unless otherwise specified. The report shall not be reproduced,
except in full, without the written approval of KEMRON.



Certified By
David L. Bumgarner

Order #97-07-390
July 24, 1997 15:52

KEMRON ENVIRONMENTAL SERVICES
REPORT NARRATIVE

808 PCB:

No difficulties were encountered during the analysis of this sample.

827 PAH:

No difficulties were encountered during the analysis of the sample.

Login #L9707390
July 24, 1997 12:59 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 808-PCB-W - PCB's (Water)

Lab Sample ID: L9707390-01
Client Sample ID: EW-14
Site/Work ID: ORMET PRIMARY/HANNIBAL, OHIO
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A

% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/22/97
Analysis Date: 07/23/97

Instrument: HP10
Analyst: MLS
Lab File ID: 019R0101

Method: 8081\3510
Run ID: R28929

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
12674-11-2	Aroclor-1016.....	ug/L		ND	0.50	1
11104-28-2	Aroclor-1221.....	ug/L		ND	0.50	1
11141-16-5	Aroclor-1232.....	ug/L		ND	0.50	1
53469-21-9	Aroclor-1242.....	ug/L		ND	0.50	1
12672-29-6	Aroclor-1248.....	ug/L		ND	0.50	1
11097-69-1	Aroclor-1254.....	ug/L		ND	1.0	1
11096-82-5	Aroclor-1260.....	ug/L		ND	1.0	1

SURROGATES- In Percent Recovery:

Decachlorobiphenyl.....	40.6	(25 - 140%)
2,4,5,6-Tetrachloro-m-xylene.....	35.8	(13 - 154%)

Login #L9707390
July 24, 1997 12:59 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 827-PAH-ORMET - Polyaromatic Hydrocarbons

Lab Sample ID: L9707390-01
Client Sample ID: EW-14
Site/Work ID: ORMET PRIMARY/HANNIBAL, OHIO
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/17/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: 07/22/97
Analysis Date: 07/23/97

Instrument: HPMS7
Analyst: JLI
Lab File ID: OR894

Method: 8270\3510
Run ID: R28978

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
56-55-3	Benzo(a)anthracene.....	ug/L		ND	10	2
205-99-2	Benzo(b)fluoranthene.....	ug/L		ND	10	2
207-08-9	Benzo(k)fluoranthene.....	ug/L		ND	10	2
191-24-2	Benzo(g,h,i)perylene.....	ug/L		ND	10	2
50-32-8	Benzo(a)pyrene.....	ug/L		ND	10	2
218-01-9	Chrysene.....	ug/L		ND	10	2
53-70-3	Dibenzo(a,h)anthracene.....	ug/L		ND	10	2
193-39-5	Indeno(1,2,3-cd)pyrene.....	ug/L		ND	10	2
SURROGATES- In Percent Recovery:						
	Nitrobenzene-d5.....	64.5	(35 - 114%)			
	2-Fluorobiphenyl.....	65.9	(43 - 116%)			
	p-Terphenyl-d14.....	106	(33 - 141%)			

644 Linn Street, Suite 501
Cincinnati, Ohio 45203
(513) 651-3440 Fax (513) 651-3452

Cooler for 34°C

CHAIN-OF-CUSTODY RECORD

PURCHASE ORDER NO.		PROJECT NAME/ NO. <u>ORMET PRIMARY</u>						NO. OF CONTAINERS	ANALYTICAL PARAMETERS <u>PAH</u> <u>PCB</u>	FORWARD RESULTS TO:			
		LOCATION <u>HANNIBAL, OHIO</u>											
SAMPLERS: <u>RAY VASKE</u> (NAME) <u>[Signature]</u> (SIGNATURE)		LABORATORY: <u>KEMRON</u> ADDRESS: _____											
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	SOIL	WATER	SAMPLE LOCATION						REMARKS:
R.V. <u>EW-14</u>							<u>EW-</u>	<u>1</u>	<u>X</u>	<u>X</u>			
<u>EW-15</u>	<u>7/17/97</u>	<u>8:30p</u>	<u>X</u>			<u>X</u>	<u>EW-15</u>	<u>1</u>	<u>X</u>	<u>X</u>			<u>NORMAL</u>
<u>EW-16</u>		<u>5:40p</u>	<u>X</u>			<u>X</u>	<u>EW-16</u>	<u>1</u>	<u>X</u>	<u>X</u>			<u>TURNAROUND</u>
<u>EW-14</u>	<u>↓</u>	<u>12:30p</u>	<u>X</u>			<u>X</u>	<u>EW-14</u>	<u>3</u>	<u>X</u>	<u>X</u>			<u>PLEASE</u>
													<u>COMBINE THE</u>
													<u>THREE, THEN</u>
													<u>EXTRACT FOR</u>
													<u>PAH + PCB</u>
													<u>AS EW-14</u>
													<u>(EQUIPMENT RINSE)</u>
													<u>IS WHAT THEY</u>
													<u>ARE</u>
													<u>RAY VASKE</u>
													<u>Spotted in</u>
													<u>locked cooler</u>
RELINQUISHED BY: _____ (NAME) _____ (SIGNATURE)		COMPANY: <u>KEMRON</u>		DATE: <u>7/17/97</u> TIME: <u>8:30p</u>		RECEIVED BY: <u>DEBRA ELLIOTT</u> (NAME) <u>[Signature]</u> (SIGNATURE)		COMPANY: <u>OVER</u>		DATE: <u>7/18/97</u> TIME: _____			
RELINQUISHED BY: <u>RAY VASKE</u> (NAME) <u>[Signature]</u> (SIGNATURE)		COMPANY: <u>DAMES & MOORE</u>		DATE: <u>7/17/97</u> TIME: <u>1:30p</u>		RECEIVED BY: <u>Brenda Gregory</u> (NAME) <u>[Signature]</u> (SIGNATURE)		COMPANY: <u>Kemron</u>		DATE: <u>7/18/97</u> TIME: <u>800</u>			

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